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**1984 EARTHQUAKE CATALOG
FOR THE
LIVERMORE VALLEY REGION**

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June 1985

Lawrence
Livermore
National
Laboratory

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Abstract

Earthquakes detected and located in the Livermore Valley Region by the Lawrence Livermore National Laboratory Seismic Network (LLSN) during the year 1984 are reported in this summary. Data are presented in the form of tables and maps with a brief explanatory text. There were 799 seismic events located by LLSN in 1984. Many are associated with the Morgan Hill earthquake sequence along the Calaveras fault in April.

Introduction

A seismic network capable of locating earthquakes in and near the Livermore Valley to an epicentral accuracy of ± 1 km is maintained by the Lawrence Livermore National Laboratory (LLNL) in collaboration with the United States Geological Survey (USGS) in Menlo Park, CA. Established in 1979 to aid in the assessment of possible geologic hazards at the LLNL site, this network has been collecting data from hundreds of earthquakes each year. LLNL operates eight three-component, and two vertical-component short period seismic stations which augment the USGS Calnet seismic stations in and near the Livermore Valley. Data from most of these stations are telemetered to both LLNL and the USGS in Menlo Park. In May, 1984, additional Calnet stations were added to the LLSN network. Telemetered data from these stations located primarily south of the Valley, provided a more extensive network, configured for observing the highly active portion of the Calaveras fault near Morgan Hill, CA, east of San Jose, during the spring of 1984. The array configuration changed several times during the year which makes evaluation of the completeness of the data collected, as compared to previous years and even within different periods of 1984, somewhat difficult. The stations added in March were no longer used in event-locating procedures after October. Figure 1 shows the network configuration with these stations included.

Figure 2 shows the stations within the limited area where coverage remained relatively stable throughout the year. Station names and pertinent information are listed in Table 1.

Data Collection and Processing

The data archiving and processing system for LLSN was changed in early 1984. The NEWT system was installed at LLNL in an attempt to further automate the digital data acquisition system and reduce the amount of time required to process events. NEWT is designed to automatically detect earthquakes, archive them and generate preliminary hypocenter locations. These are usually adequate starting locations for subsequent processing but have been found to be unreliable in some cases due to problems with automatic picking and locating algorithms in NEWT. These problems are described in greater detail by Scheimer et al. (1985).

Locations are currently calculated by a revised version of HYP071 (Lee and Lahr, 1975) that uses a one-dimensional velocity model of the Livermore Valley as shown in Table 2. Lateral heterogeneity may be partially accounted for by using more detailed velocity models and station corrections which were derived for three separate regions of the valley as outlined by Taylor and Scheimer (1982), so that further refinement of hypocenter locations may be achieved. Figure 3 shows how these regions are delineated and Table 3 lists the velocity models used for each. In general, epicentral locations are probably more accurate than depth determinations. It seems safe to assume, however, that the Livermore Valley region is characterized by relatively shallow seismic activity (<15 km).

Table 4 is the listing of located hypocenters within the Livermore Valley region. The magnitudes of local seismic events are determined from coda durations using the method described by Lee et al. (1972). The relationship used is

$$M_L = 0.87 + 2 \log T + 0.0035D$$

where T is the signal duration in seconds and D is the epicentral distance in kilometers from the stations. This catalog appears to be complete for events with magnitudes down to $M_L = 1.0$. 'GAP' is the largest azimuthal separation between stations in degrees; 'DMIN' is the distance from the epicenter to the closest station; 'RMS' is the root mean square error of travel-time residuals in seconds; 'ERH' and 'ERZ' are the two standard deviation errors of the epicenter and focal depth, respectively; 'QM' is the solution quality.

The solution quality factors indicate only a comparative quality of the solution calculated by HYPO71. It is an average of statistical measures of the final solution that considers the values of the RMS travel-time residuals and station number and distribution. Table 5 lists the quality factors and their associated estimates of epicentral uncertainty.

Figure 4 is a cumulative map of the Livermore Valley seismicity in 1984. Major faults and some cultural features are included for reference. Figures 5-12 are epicenter maps for each quarter of 1984.

Discussion

By focusing on areas throughout the region where station coverage has remained relatively constant over the past years, a comparative study of cumulative maps of the seismic activity in these specific areas can be made, despite the temporary network enlargement in 1984. Table 6 lists the number of earthquakes detected and located within regions 1 and 2 from 1980 to 1984. Region 1 covers the Marsh Creek and northern Greenville faults and region 2 includes the Las Positas, southern Greenville, Williams, and Valle faults.

The high rate of seismicity in both regions during 1980 is due to the Marsh Creek/Greenville Fault earthquake sequence in January. The main shock, magnitude 5.9, occurred on January 24, 1980. Since then, seismicity rates in both regions have significantly declined.

Figure 13 shows a slight northward migration of the cluster of events typically associated with the Del Valle Reservoir between 1983 and 1984. Elsewhere, the previously quiescent northern section of the Calaveras fault seems to have been seismically awakened. Most of the events in this area occurred within the last quarter of the year. Epicentral location lies just to the west of the mapped fault trace but tend to follow the curved shape of the trace. These events may be seismic adjustments in response to the increase in activity along the more southern section of the Calaveras Fault during the first half of the year and continuing into 1985.

The apparent increase in seismicity in 1984 within the Diablo Range directly south of the Livermore Valley may be a function of better network coverage when the USGS Calnet stations were added. Though not shown on the maps included, many of these epicenters lie along mapped fault traces within the range.

The data included in this report are available as part of the larger LLSN data set of seismicity recorded from 1979 to the present. Analog 'previews' of events, as well as digital recordings, are maintained at the Lawrence Livermore National Laboratory's Seismic Observatory in the Earth Sciences Department. For information on data availability and exchange, contact the author at LLNL.

Acknowledgments

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FIGURE 1

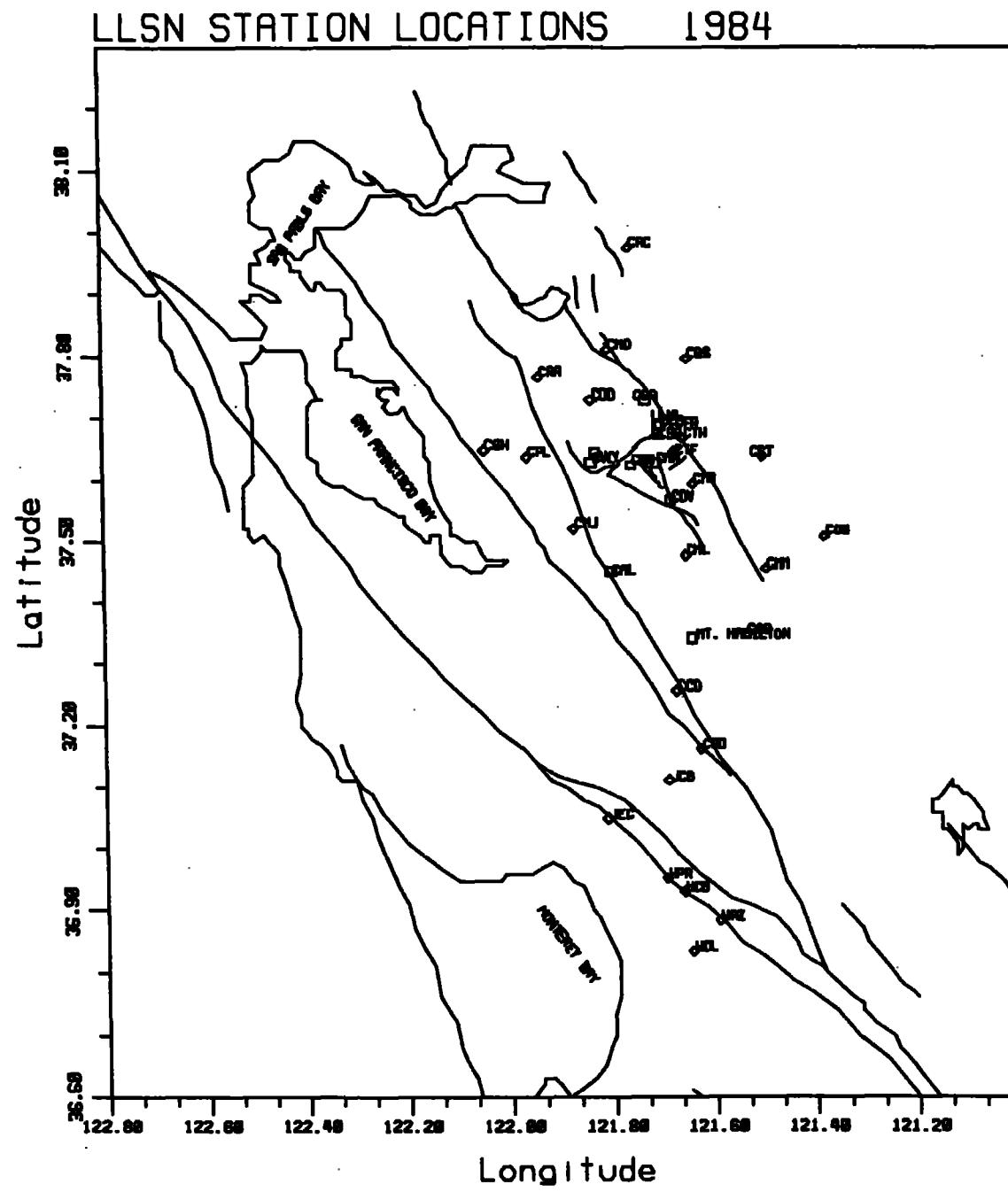


FIGURE 2

LLSN STATION LOCATIONS

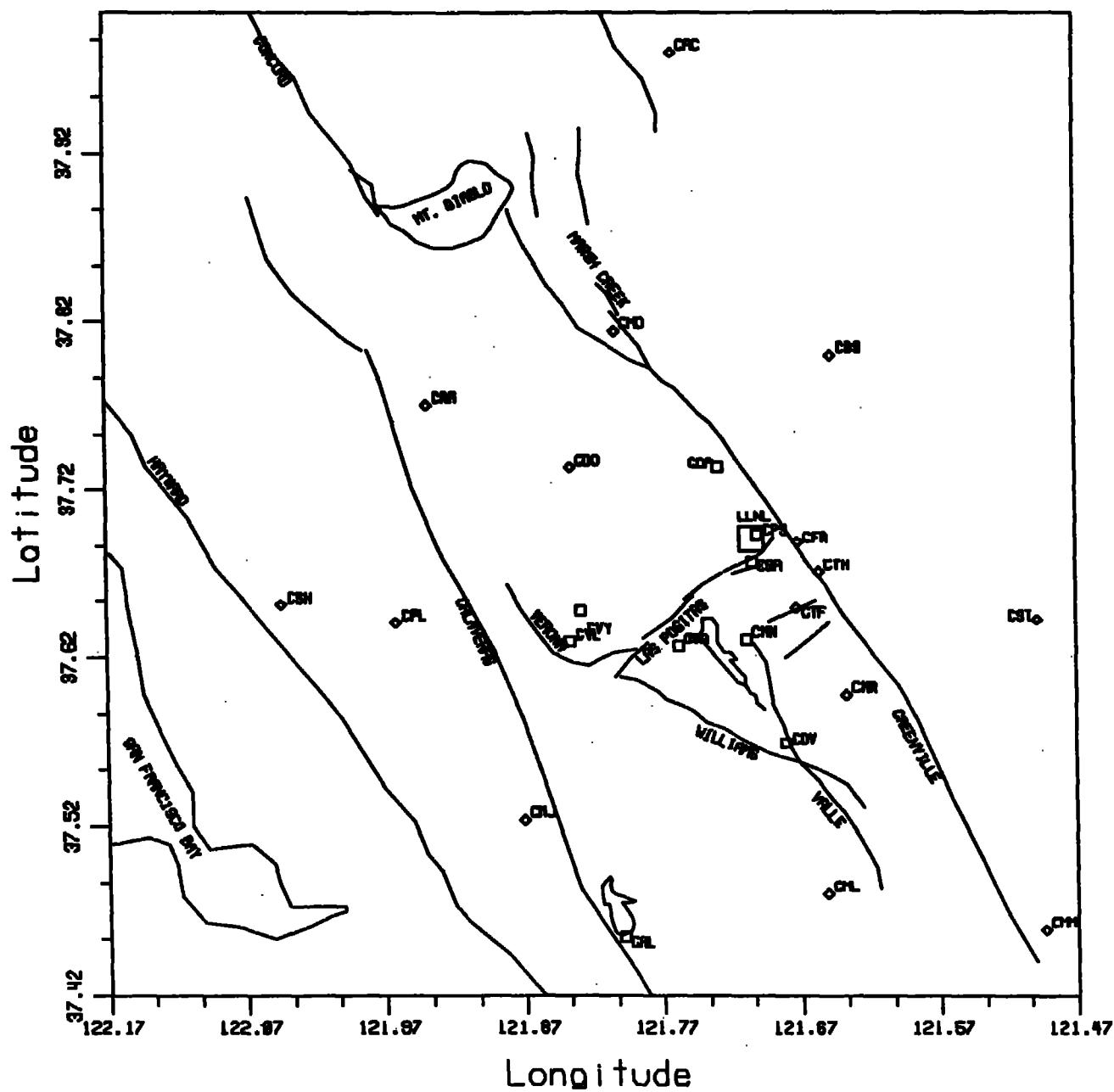


FIGURE 3

REGIONAL DIVISIONS

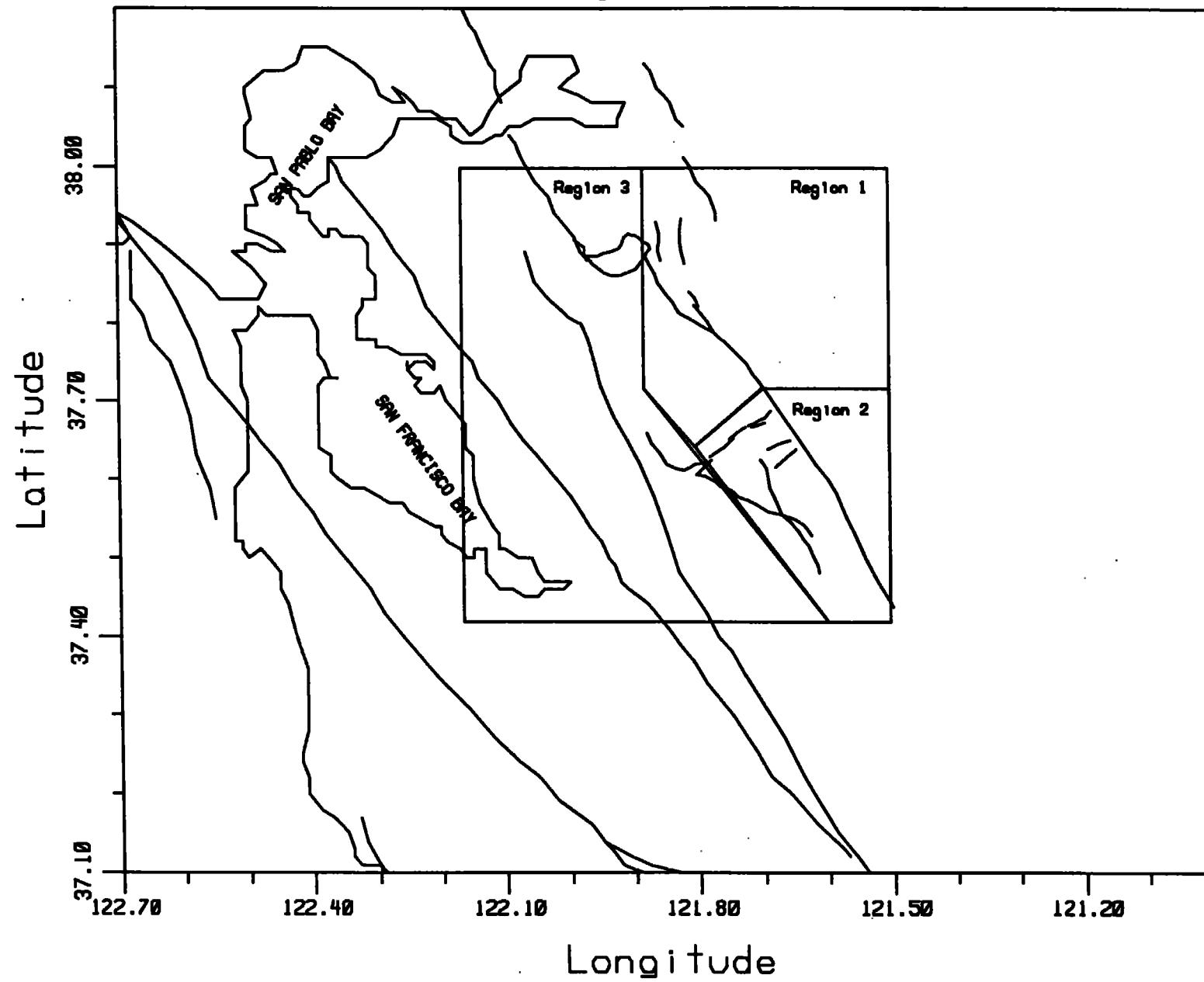


TABLE 1. STATION LOCATIONS AND CORRECTIONS

<u>Station Name</u>	<u>Latitude Deg. Min.</u>	<u>Longitude Deg. Min.</u>	<u>Elevation Meters</u>	<u>Delay Region 1 Sec</u>	<u>Delay Region 2 Sec</u>	<u>Delay Region 3 Sec</u>
CAC	37 58.57N	121 45.62W	74	+ .41	+ .22	+ .60
CAL	37 27.07N	121 47.95W	265	- .10	- .60	- .21
CAO	37 20.96N	121 31.96W	628	- .16	- .85	-1.0
CBS	37 47.81N	121 38.77W	279	+ .07	+ .13	+ .10
CCO	37 15.46N	121 40.35W	330			+ .31
CDA	37 43.80N	121 43.70W	190		+ .27	- .03
CDO	37 43.80N	121 50.12W	198	+ .16	+ .36	+ .19
CDV	37 33.98N	121 40.80W	250	- .36	- .51	- .40
CFR	37 41.14N	121 40.26W	260		+ .08	+ .02
CML	37 28.64N	121 39.09W	1076			
CMJ	37 31.25N	121 52.23W	498	+ .14	- .26	+ .066
CMM	37 27.34N	121 29.62W	1117	- .30	- .83	- .30
CMN	37 37.65N	121 42.50W	245	+ .02	- .16	- .07
CMO	37 48.68N	121 48.15W	792	+ .11	+ .32	+ .12
CMR	37 35.68N	121 38.22W	500	- .38	- .48	- .25
CQS	37 30.51N	121 27.44W	1020	- .77	- .94	- .98
CPL	37 38.25N	121 57.64W	317	+ .12	+ .05	- .04
CPS	37 41.40N	121 42.00W	155		+ .19	+ .11
CRA	37 46.03N	121 56.25W	171	+ .29	+ .58	+ .40
CSA	37 40.43N	121 42.16W	215		- .20	
CSH	37 38.80N	122 2.57W	170		+ .06	- .12
CST	37 38.35N	121 29.89W	205		- .18	- .09
CTF	37 38.78N	121 40.35W	295		- .19	- .24
CTH	37 40.08N	121 39.34W	1000			
CVA	37 37.12N	121 45.52W	198		- .01	
CVL	37 37.58N	121 50.14W	245	+ .32	+ .38	+ .26
CVY	37 38.66N	121 49.65W	200		+ .43	+ .35
HCB	36 55.88N	121 39.63W	219			
CAD	37 9.77N	121 37.45W	244			
HAZ	36 53.08N	121 35.45W	122			
HDL	36 50.12N	121 38.64W	204			
HPR	36 57.19N	121 41.70W	94			
JCB	37 6.71N	121 41.33W	192			
JEC	37 3.04N	121 48.56W	438			

TABLE 2
Average Velocity Model for Livermore Valley Region

<u>Vp(km/s)</u>	<u>Depth to Layer (km)</u>
3.4	0.0
4.0	1.0
4.6	2.0
4.8	3.0
5.0	4.0
5.1	5.0
5.3	6.0
5.6	7.0
5.9	12.0
6.2	17.0
8.0	25.0

TABLE 3

Velocity Model - Region 1

<u>Vp(km/s)</u>	<u>Depth to Layer (km)</u>
3.125	0.00
4.019	1.0
4.309	2.0
4.509	3.0
4.897	4.0
5.135	5.0
5.657	7.0
6.420	12.0
7.736	25.0

Velocity Model - Region 2

<u>Vp(km/s)</u>	<u>Depth to Layer (km)</u>
3.088	0.0
4.250	1.0
4.572	2.0
4.863	4.0
5.044	5.0
5.473	7.0
6.399	12.0
7.750	25.0

Velocity Model - Region 3

<u>Vp (km/s)</u>	<u>Depth to Layer (km)</u>
3.4	0.0
4.0	1.0
4.6	2.0
4.8	3.0
5.0	4.0
5.1	5.0
5.3	6.0
5.6	7.0
5.9	12.0
6.2	17.0
8.0	25.0

LLSN SEISMIC DATA

TABLE 4

SEISMIC EVENTS FOR 'FIRST QUARTER' 1984

DATE	ORIGIN	LAT N	LONG W	DEPTH	MAG	NO GAP	DMIN	RMS	ERH	ERZ	QM
840105	10 0	55.45	37-22.52	121-45.56	9.08	3.03	30 222	9.1 0.19	0.7	1.0	C1
840106	4 8	53.42	37-23.00	121-45.37	2.47	1.33	8 218	8.4 0.18	2.2	2.1	C1
840106	2236	52.48	37-28.19	121-50.89	0.69	2.23	27 215	4.6 0.21	1.0	1.3	C1
840107	2335	10.73	37-24.36	121-47.17	10.11	1.51	20 223	5.1 0.17	0.9	0.8	C1
840108	1628	3.65	37-22.73	121-38.55	7.97		6 180	7.5 0.26	1.2	3.4	C1
840108	1628	0.73	37-14.30	121-37.84	4.00		3 289	37.4 0.00			C1
840108	1752	1.00	37-29.46	121-42.95	10.59	0.83	15 185	8.8 0.14	0.6	0.8	B1
840111	1418	57.78	37-26.45	121-47.68	5.61	2.65	30 240	12.3 0.25	1.0	1.1	C1
840111	1514	17.81	37-25.34	121-37.88	12.86	1.26	14 148	6.4 0.20	1.0	1.5	C1
840118	2128	48.58	37-51.88	122- 2.17	0.86	1.46	17 242	13.9 0.25	1.0	4.9	C1
840119	124	55.77	36-53.10	121-42.80	8.94	1.97	22 317	63.3 0.22	2.3	1.8	C1
840123	422	33.88	37-44.80	121-53.93	11.38	1.97	16 186	4.1 0.23	1.1	1.5	B1
840123	540	17.86	36-39.54	122- 5.54	4.00	3.87	3 348	91.7 0.04			C1
840123	558	3.06	37-19.78	121-40.77	19.15		5 314	17.1 0.04	0.1	6.3	D1
840124	2955	24.83	37-36.59	121-43.88	7.35	0.30	12 98	2.6 0.08	0.4	0.4	B1
840126	259	0.06	37-42.14	122- 9.40	4.62	1.44	14 297	11.7 0.15	1.0	1.2	C1
840203	1541	56.00	37-28.70	121-37.74	4.00	0.89	8 131	13.6 0.17	0.72	32.8	C1
840204	632	42.72	37-34.43	121-41.56	7.23	0.74	14 64	1.4 0.09	0.4	0.3	A1
840204	852	45.78	37-27.39	121-47.94	8.37	1.00	20 137	0.6 0.14	0.6	0.5	B1
840205	714	56.36	37-28.85	121-50.13	6.95	0.95	12 195	4.3 0.11	0.8	0.6	C1
840206	1946	30.96	37-34.28	121-41.06	9.96	0.98	18 80	0.7 0.13	0.5	0.4	A1
840208	2348	19.06	37-31.17	121-44.94	10.11	0.83	8 117	5.0 0.12	1.0	1.4	B1
840210	2 1	15.33	37-18.57	121-41.94	12.09	1.00	17 254	15.4 0.11	0.7	0.8	C1
840211	1511	58.91	37-32.32	121-38.11	8.05	0.99	16 80	5.0 0.11	0.4	0.5	A1
840212	552	19.81	37-32.50	121-38.04	8.75	0.72	15 80	4.9 0.07	0.3	0.3	A1
840213	453	44.38	37-37.06	121-43.70	3.28	0.72	8 129	2.1 0.13	0.6	0.6	B1
840213	943	53.70	37-27.88	121-34.85	9.36	0.88	14 105	6.5 0.22	1.1	1.7	B1
840220	1612	45.41	37-34.52	121-42.23	10.01		8 164	2.3 0.14	1.2	1.6	B1
840220	1612	45.23	37-35.14	121-41.74	11.51		4 208	2.6 0.00			C1
840220	1612	46.26	37-36.27	121-41.99	4.00		3 186	5.4 0.05			C1
840220	2 6	58.98	37-56.65	121-27.56	22.58	1.27	12 302	33.8 0.09	5.8	5.2	D1
840223	1145	11.77	37-34.43	121-42.16	9.53	1.48	29 63	2.2 0.16	0.4	0.4	B1
840224	428	59.84	37-38.18	121-50.78	5.28	1.20	13 95	1.5 0.14	0.6	0.5	B1
840224	434	56.26	37-38.22	121-50.76	5.13	1.15	13 95	1.5 0.15	0.6	0.6	B1
840225	4 4	25.52	37-38.31	121-50.64	5.79	1.31	13 95	1.5 0.12	0.7	0.4	B1
840225	1130	33.24	37-28.29	121-48.12	8.20	1.38	26 138	2.3 0.19	0.7	0.8	C1
840226	217	53.31	37-38.32	121-50.95	5.15	1.28	21 98	1.8 0.16	0.5	0.4	B1
840226	1147	59.53	37-28.99	121-46.68	8.32	0.88	14 140	3.9 0.23	0.9	1.4	C1
840228	121	18.45	37-35.31	121-42.66	10.41	0.69	8 136	3.6 0.04	0.6	0.5	B1
840229	536	31.85	37-17.58	121-41.24	13.78	1.33	10 265	15.1 0.14	1.6	1.9	C1
840229	6 0	31.79	37-18.85	121-41.25	11.85	1.26	13 251	14.3 0.12	1.7	0.7	C1
840229	6 5	40.49	37-17.89	121-41.13	13.86	1.31	9 259	14.7 0.08	1.3	1.1	C1
840302	1323	57.48	37-25.83	121-47.53	8.29		6 217	2.9 0.09	1.5	1.6	C1
840305	1143	52.89	37-31.41	121-24.81	17.82	2.21	13 160	2.9 0.35	5.6	6.6	D1
840306	932	34.37	37-22.74	121-37.78	6.58	1.42	9 187	9.2 0.13	1.2	1.4	C1
840307	11 1	41.86	37-29.71	121-50.51	6.00	1.53	10 178	3.8 0.13	1.7	1.5	C1
840308	536	53.51	37-18.92	121-38.44	16.21		9 298	4.4 0.14	1.8	1.8	C1
840308	2357	10.45	37-23.89	121-34.87	1.39	1.77	6 148	8.6 0.14	2.3	5.3	C1
840309	1917	34.18	37-48.21	121-47.56	2.88	1.92	5 263	12.9 0.09	6.6	16.6	D1
840309	1718	44.58	37-31.32	121-52.33	8.67	1.66	6 262	0.2 0.05	0.7	0.9	C1
840310	835	39.49	37-40.17	122- 3.88	8.24		8 305	2.9 0.13	4.2	1.4	D1
840310	854	12.52	37-22.91	121-43.81	4.00		6 220	9.8 0.14	1.82	43.2	D1
840311	1023	2.13	37-38.88	121-42.73	14.11	1.81	12 138	0.9 0.06	0.4	0.4	B1
840311	1024	44.28	37-37.91	121-42.88	14.05	1.53	18 74	0.5 0.07	0.4	0.3	A1
840312	848	12.01	37-32.84	121-41.63	9.22	1.41	14 112	2.4 0.12	0.6	0.5	B1
840312	1734	37.54	37-28.86	121-38.31	7.69	1.47	14 132	3.5 0.23	0.9	1.8	B1
840313	435	51.03	37-30.53	121-43.91	10.57		13 88	7.9 0.09	0.4	0.5	A1
840314	19 2	34.88	37-51.07	121-49.55	12.44	1.98	9 198	13.5 0.14	1.4	3.0	C1
840315	5 8	2.23	37-26.56	121-37.91	7.03		7 134	4.2 0.16	1.3	1.8	B1
840317	620	29.04	37-41.70	121-52.85	13.70		6 269	7.3 0.07	3.0	1.8	D1
840317	620	29.53	37-41.87	121-53.06	14.93		6 271	7.8 0.05	2.4	1.8	C1

846318	527	15.48	37-45.68	121-44.40	11.69	3.33	28	167	3.5	0.12	0.4	0.3	B1	
846318	1131	6.36	37-45.58	121-44.54	12.87	1.37	14	176	3.5	0.15	1.0	1.3	C1	
846319	10	6	16.65	37-37.58	121-42.25	6.65	0.86	8	139	0.4	0.05	0.5	0.2	B1
846319	1110	36.83	37-21.58	121-37.77	13.45	2.33	18	296	8.6	0.15	0.9	1.1	C1	
846320	1757	54.62	37-23.63	121-33.30	10.77	2.10	19	128	5.3	0.21	1.0	1.7	B1	
846321	1825	48.30	37-54.68	121-59.75	11.73	2.17	21	243	16.8	0.13	0.8	0.5	C1	
846326	937	12.76	37-28.91	121-40.18	12.31	1.75	17	113	1.6	0.23	0.9	1.2	B1	
846326	1331	33.27	37-32.14	121-56.63	4.30	1.73	15	199	6.7	0.12	0.5	0.9	C1	
846327	938	18.56	37-38.81	121-41.45	9.67	1.30	14	82	2.6	0.08	0.4	0.3	A1	
846327	124	0.87	37-22.65	121-45.65	9.01	1.77	16	227	9.2	0.17	1.1	1.3	C1	
846327	336	35.17	37-42.71	122-11.26	6.69	2.99	28	282	14.6	0.27	2.0	2.8	C1	
846327	346	39.75	37-43.65	122-	9.34	5.66	2.87	25	277	12.6	0.33	2.3	2.5	D1
846327	410	42.85	37-42.68	122-10.31	10.56	2.18	9	315	13.3	0.12	1.7	2.1	C1	
846327	435	18.94	37-41.38	122-	6.55	6.40	1.90	7	306	7.5	0.12	5.7	1.2	D1
846327	713	46.65	37-49.45	121-55.78	9.70		8	298	11.3	0.19	33.3	20.8	D1	
846330	347	50.51	37-43.23	122-	6.33	3.64	1.79	16	284	9.8	0.20	5.7	2.4	D1
846331	326	4.34	37-22.50	121-46.30	10.22	1.64	16	234	8.8	0.16	1.0	0.9	C1	

LLSN SEISMIC DATA

SEISMIC EVENTS FOR 'SECOND QUARTER' 1984

DATE	ORIGIN	LAT N	LONG W	DEPTH	MAG	NO GAP	DMIN	RMS	ERH	ERZ	QM
840405	1 8	35.75	37-51.17	121-50.13	11.77	1.97	21	162	5.4	0.28	1.3
840405	137	29.63	37-50.97	121-46.25	14.00	1.86	13	143	4.2	0.00	4.0
840405	1654	59.38	37-50.69	122- 6.98	6.08	1.96	15	294	17.9	0.19	1.9
840405	1727	10.96	37-22.41	121-43.99	11.73	1.78	9	225	10.4	0.15	2.1
840405	2025	2.64	37-30.87	121-51.62	6.68	1.81	8	178	6.9	0.04	0.3
840406	249	14.85	37-22.03	121-44.98	13.24	1.93	13	232	10.3	0.17	1.8
840406	1515	53.34	37-38.36	121-42.34	7.83	1.28	12	83	1.3	0.15	0.7
840407	1133	36.24	37-43.85	122- 8.46	6.11	2.54	17	297	12.4	0.18	2.1
840407	1356	14.06	37-49.51	121-49.15	9.30	1.84	12	256	2.1	0.11	1.9
840407	1810	8.87	37-49.77	121-48.80	9.72	1.78	16	138	2.2	0.10	0.6
840408	725	32.72	37-49.35	122- 6.34	12.13	2.46	19	289	16.0	0.15	1.1
840408	1340	18.26	37-43.13	122- 9.42	3.19	2.39	17	301	12.8	0.25	2.3
840424	2115	19.48	37-19.46	121-42.22	8.35	24	246	15.4	0.19	2.2	3.7
840424	2150	57.75	37-18.36	121-39.73	16.58	2.02	9	273	14.3	0.13	1.6
840424	22 2	16.53	37- 9.77	121-36.24	4.00	2.26	7	312	33.9	0.14	10.6206.8
840424	22 4	11.81	37-17.00	121-41.01	9.97	2.89	23	267	15.2	0.18	1.1
840424	22 8	7.92	37-22.59	121-39.74	6.35	1.11	5	200	11.9	0.23	0.3
840424	2219	48.74	37-17.85	121-46.06	14.77	1.66	9	260	13.3	0.12	2.3
840424	2211	42.85	37-15.84	121-39.55	16.32	1.53	8	277	14.7	0.10	6.1
840424	2213	58.70	37-15.62	121-38.23	1.74	3.05	26	286	13.3	0.16	2.0
840424	2220	31.79	37-18.32	121-46.12	8.79	2.81	27	273	14.8	0.16	0.9
840424	2227	39.28	37-17.17	121-46.51	8.52	2.53	24	265	14.5	0.25	1.4
840424	2248	36.00	37-17.73	121-46.63	13.77	1.97	13	261	14.1	0.12	1.8
840424	2258	25.56	37-19.54	121-41.88	8.84	1.88	16	245	14.9	0.15	1.9
840424	2332	11.99	37-18.91	121-42.21	12.88	1.79	6	251	15.6	0.07	1.8
840424	2335	27.06	37-19.10	121-42.97	18.20	2.95	28	251	16.5	0.20	0.9
840424	2349	34.81	37-16.06	121-46.53	13.31	1.66	16	269	14.9	0.13	2.5
840424	2353	22.62	37-13.95	121-39.84	14.29	1.99	9	290	16.7	0.11	2.3
840425	2024	32.63	37-41.72	121-38.84	14.07	1.77	15	115	2.3	0.15	0.9
840425	0 0	37.89	37-20.50	121-41.77	2.88	1.74	18	236	14.5	0.30	1.5
840425	0 4	50.24	37-19.17	121-41.05	11.33	1.36	9	249	13.8	0.12	2.0
840425	044	31.83	37-19.46	121-42.63	13.25	1.81	12	247	16.0	0.13	1.9
840425	052	1.48	37-15.66	121-39.53	12.44	2.34	26	282	15.8	0.13	0.7
840425	056	38.57	37-19.65	121-42.25	12.00	1.66	11	245	15.4	0.14	1.7
840425	057	33.74	37-15.69	121-39.55	7.04	1.65	7	278	14.9	0.10	3.2159.4
840425	1 2	29.22	37-22.91	121-46.96	4.00	1.26	6	201	12.9	0.26	3.2435.7
840425	238	29.88	37-18.52	121-41.91	11.10	2.11	19	254	15.4	0.11	0.6
840425	318	41.26	37-18.39	121-44.09	15.29	1.53	6	257	15.3	0.07	4.9
840425	323	34.24	37-18.25	121-41.64	10.72	1.86	11	256	15.2	0.14	2.7
840425	339	46.14	37-19.31	121-41.21	4.53	1.56	7	246	14.0	0.09	2.1
840425	4 0	36.93	37-15.18	121-46.06	12.46	1.77	11	281	16.1	0.07	1.3
840425	4 3	28.25	37-17.61	121-46.63	14.64	1.84	16	262	14.2	0.10	1.8
840425	4 9	19.14	37-15.12	121-39.88	11.31	2.59	28	281	15.9	0.20	1.3
840425	416	54.11	37-18.20	121-41.76	4.00	2.95	27	257	15.4	0.18	1.2
840425	419	31.39	37-20.94	121-41.22	5.25	1.72	8	229	13.7	0.16	2.4
840425	435	19.70	37-17.55	121-41.48	8.70	1.62	16	262	15.4	0.11	0.7
840425	455	51.02	37-19.43	121-42.27	14.03	1.85	13	247	15.5	0.10	0.7
840425	518	47.51	37-17.38	121-41.31	11.42	2.68	25	263	15.3	0.19	1.2
840425	522	11.63	37-20.44	121-41.74	6.56	1.58	8	236	14.5	0.10	1.8
840425	651	36.56	37-18.98	121-38.11	9.39	1.54	6	248	9.8	0.10	3.1
840425	713	23.40	37-20.95	121-37.35	2.98	1.72	7	216	8.0	0.15	1.7
840425	722	22.70	37-17.99	121-41.28	12.65	1.60	9	258	14.8	0.11	2.2
840425	727	45.74	37-18.39	121-36.53	8.65	1.72	7	261	8.3	0.18	4.9
840425	733	32.30	37-15.37	121-39.25	13.30	1.86	16	281	14.9	0.09	0.9
840425	744	57.27	37-18.15	121-38.89	6.53	2.17	10	258	11.5	0.18	3.7
840425	815	18.11	37-47.43	121-53.42	8.64	1.51	7	195	4.9	0.06	1.3
840425	827	31.43	37-17.83	121-46.38	10.84	1.86	16	260	13.7	0.13	3.9
840425	856	5.97	37-19.89	121-42.63	11.60	1.78	13	245	15.7	0.10	0.7
840425	929	32.57	37-46.61	121-53.66	9.67	1.67	16	170	4.0	0.16	2.0
840425	1150	17.28	37-16.86	121-46.38	12.15	1.84	16	268	14.6	0.10	1.9
840425	12 4	26.81	37-18.85	121-41.96	9.65	1.80	15	253	15.4	0.15	1.3
840425	1246	15.29	37-17.23	121-36.93	8.52	1.71	6	271	16.1	0.16	4.6
											5.4 D1

540425	1326	58.51	37-21.84	121-41.82	5.09	2.02	13	226	13.2	0.19	1.6	1.8	C1	
540425	1333	28.27	37-17.54	121-40.22	12.68	1.68	11	262	13.8	0.11	1.9	1.4	C1	
540425	1340	43.80	37-18.65	121-40.68	12.19	1.78	11	258	14.0	0.12	1.9	1.8	C1	
540425	14	6	57.82	37-17.24	121-41.19	13.88	1.95	11	265	15.3	0.11	1.9	1.7	C1
540425	1414	44.93	37-18.58	121-42.48	12.68	2.49	22	254	16.2	0.12	0.6	0.8	C1	
540425	1913	15.13	37-32.65	121-56.20	4.43	1.73	18	218	6.4	0.12	1.0	1.0	C1	
540425	2028	58.23	37-18.65	121-40.42	3.79	2.58	24	258	13.6	0.20	1.6	2.2	C1	
540425	21	2	18.40	37-16.24	121-40.20	11.84	2.22	17	273	15.0	0.09	0.7	0.5	C1
540425	2138	17.93	37-18.56	121-41.47	13.45	1.83	9	253	14.7	0.07	1.3	1.1	C1	
540425	2214	24.02	37-18.95	121-41.88	8.02	1.86	13	250	14.7	0.14	1.6	3.4	C1	
540425	2256	37.99	37-16.53	121-40.52	12.05	2.11	18	271	15.1	0.09	0.6	1.1	C1	
540425	2342	48.28	37-20.77	121-41.75	4.00	1.70	7	233	14.5	0.30	4.8	5.7	D1	
540426	042	28.41	37-13.54	121-37.30	8.02	3.01	24	291	15.8	0.17	3.2	1.8	D1	
540426	050	1.67	37-15.66	121-40.10	4.00	2.71	26	278	15.6	0.21	1.6	1.4	C1	
540426	111	40.06	37-18.26	121-42.54	11.25	1.57	10	257	16.4	0.18	1.6	1.6	C1	
540426	113	33.74	37-19.18	121-39.09	13.16	1.41	8	247	12.3	0.10	3.0	4.0	D1	
540426	214	54.37	37-18.12	121-40.92	5.03	1.93	13	257	14.3	0.16	1.4	1.7	C1	
540426	227	47.32	37-18.98	121-41.07	14.07	1.82	13	249	14.6	0.09	1.2	1.0	C1	
540426	255	43.44	37-16.72	121-40.31	14.79	1.74	9	269	14.6	0.11	2.2	1.6	C1	
540426	322	48.84	37-21.56	121-39.59	4.00	1.44	6	215	11.3	0.35	4.9596.3	D1		
540426	1051	35.51	37-55.79	121-52.06	0.91	1.23	6	223	16.7	0.13	1.1	4.5	C1	
540426	329	25.06	37-16.76	121-38.64	9.51	2.32	17	271	12.6	0.10	1.6	2.2	C1	
540426	410	49.06	37-16.76	121-40.28	13.97	2.13	20	269	14.6	0.21	3.5	2.4	D1	
540426	450	5.40	37-21.91	121-41.01	6.03	1.39	9	216	12.5	0.19	1.8	2.8	C1	
540426	515	9.11	37-20.28	121-41.50	5.19	2.08	14	237	14.2	0.24	4.9	3.1	D1	
540426	531	52.49	37-20.87	121-38.27	4.60	1.14	7	220	9.3	0.15	2.0	2.1	C1	
540426	629	54.10	37-14.58	121-37.16	8.81	3.05	25	288	14.1	0.16	3.0	1.9	D1	
540426	636	12.66	37-19.87	121-40.36	4.72	1.98	9	239	12.6	0.26	4.5	3.9	D1	
540426	659	19.39	37-16.79	121-40.79	11.12	2.48	28	268	15.2	0.18	1.1	0.7	C1	
540426	712	45.31	37-16.56	121-37.59	11.88	1.79	10	276	11.7	0.13	4.3	2.0	D1	
540426	752	3.32	37-15.55	121-40.27	9.30	2.57	27	275	15.5	0.17	0.0	1.5	C1	
540426	854	51.78	37-17.53	121-41.11	13.24	1.80	10	262	14.9	0.10	1.9	1.4	C1	
540426	923	27.48	37-17.67	121-40.65	14.63	1.68	11	261	14.2	0.10	1.7	1.4	C1	
540426	1129	24.91	37-18.77	121-39.72	4.98	1.88	8	251	12.2	0.14	5.1	4.0	D1	
540426	1349	22.56	37-23.17	121-42.47	4.00	1.04	13	267	16.8	0.20	1.1243.2	D1		
540426	1438	49.59	37-24.11	121-34.06	4.00	1.10	6	139	6.6	0.43	3.7747.8	C1		
540426	1449	8.26	37-17.81	121-41.78	12.81	1.68	9	269	15.6	0.10	2.0	1.7	C1	
540426	1513	11.27	37-20.31	121-41.87	12.87	1.74	10	238	14.7	0.10	1.6	1.7	C1	
540426	1532	59.39	37-17.03	121-40.37	11.18	2.14	18	267	14.4	0.12	1.5	0.7	C1	
540426	1535	24.84	37-15.36	121-40.12	12.65	2.65	22	279	15.9	0.15	1.2	1.5	C1	
540427	910	50.37	37-18.07	121-41.24	13.07	2.29	17	253	14.3	0.13	1.0	1.3	C1	
540427	1048	58.14	37-29.98	121-40.44	5.00	1.70	8	237	12.6	0.15	2.6	2.3	D1	
540427	11	8	9.76	37-17.92	121-41.17	11.67	1.78	10	259	14.7	0.10	1.7	0.5	C1
540427	1412	9.67	37-15.97	121-35.26	12.79	2.03	9	296	16.4	0.13	6.0	4.3	D1	
540427	16	5	38.65	37-18.94	121-41.61	10.84	1.83	14	250	14.7	0.11	1.8	2.9	C1
540427	1648	34.87	37-18.40	121-40.83	9.68	3.00	24	255	13.9	0.18	1.8	1.6	C1	
540427	1752	8.67	37-17.73	121-38.13	5.55	1.79	8	263	16.0	0.12	3.9	3.1	D1	
540427	1810	59.48	38- 0.98	122- 5.91	4.74	1.79	18	295	36.0	0.23	8.8	9.1	D1	
540427	19	3	15.88	37-18.96	121-40.63	8.70	1.41	9	249	13.3	0.12	2.7	5.5	D1
540427	1955	10.48	37-16.50	121-37.32	9.43	1.78	9	277	11.4	0.10	4.1	4.1	D1	
540427	22	3	22.83	37-31.60	122- 5.89	9.65	1.50	11	272	14.3	0.09	0.0	1.7	C1
540427	2350	5.17	37-11.34	121-47.52	4.00	1.67	6	297	29.1	0.07	48.3\$1146	D1		
540428	0	0	6.51	37-17.95	121-41.23	13.95	1.93	9	259	14.8	0.07	1.4	1.2	C1
540428	251	34.12	37-20.68	121-37.03	4.24	1.70	5	226	7.5	0.15	3.6	4.9	D1	
540428	443	27.39	37-19.44	121-40.87	4.00	1.41	9	245	13.5	0.14	2.4	2.5	C1	
540428	838	50.00	37-18.00	121-40.73	14.04	2.05	15	253	14.1	0.12	0.9	1.5	C1	
540428	1017	49.15	37-17.67	121-40.92	14.42	1.66	8	259	14.4	0.06	1.2	1.0	C1	
540428	1130	40.93	37-20.12	121-40.12	3.04	1.93	6	238	12.2	0.12	3.1	3.8	D1	
540428	1322	34.71	37-14.37	121-40.73	16.78	1.81	9	285	17.8	0.10	2.8	1.0	D1	
540428	1543	11.87	37-18.81	121-38.94	5.61	1.72	9	250	11.1	0.13	2.2	1.7	C1	
540428	1612	44.55	37-18.92	121-40.98	10.28	1.89	13	256	13.9	0.13	2.0	3.2	C1	
540428	1853	50.67	37-18.62	121-41.10	10.92	1.83	11	253	14.2	0.13	2.5	3.9	C1	
540428	2034	1.44	37-19.41	121-41.65	4.00	1.63	7	248	14.8	0.11	2.2	1.5	C1	
540429	136	35.63	37-17.49	121-39.17	6.70	1.25	7	264	12.4	0.06	4.3	3.9	D1	
540429	143	7.00	37-19.15	121-39.15	4.17	1.97	18	248	11.1	0.13	1.4	0.9	C1	
540429	513	21.77	37-21.33	121-40.63	5.40	1.27	8	223	13.2	0.11	1.5	1.3	C1	
540429	6	1	2.81	37-15.27	121-39.44	13.01	1.70	8	281	15.3	0.05	1.2	0.9	C1
540429	841	12.33	37-20.26	121-38.73	4.42	1.68	8	230	10.1	0.15	2.4	2.2	C1	
540429	1248	29.46	37-15.96	121-40.00	14.01	1.62	8	275	15.2	0.07	1.4	1.3	C1	
540429	14	9	2.57	37-21.12	121-37.35	1.11	1.45	5	213	8.0	0.09	3.4	4.6	D1

840429	1920	24.51	37-19.16	121-39.34	4.57	1.65	16	244	11.4	0.11	1.1	0.7	C1
840429	2354	28.85	37-21.63	121-40.71	4.86	1.52	16	218	13.6	0.17	1.5	2.1	C1
840429	2358	22.33	37-14.58	121-37.95	9.99	2.56	19	284	14.0	0.13	2.2	1.4	C1
840430	053	3.67	37-24.83	121-40.59	6.99	1.63	14	173	7.5	0.18	0.9	0.9	C1
840430	113	24.84	37-19.10	121-40.59	11.71	1.90	16	244	13.2	0.11	1.1	0.6	C1
840430	312	28.07	37-20.61	121-40.24	4.00	1.32	5	229	12.2	0.14	2.0	1.9	C1
840430	352	43.28	37-17.10	121-38.76	9.98	1.73	12	264	12.3	0.11	1.8	1.7	C1
840430	1446	2.24	37-17.99	121-41.46	11.94	1.62	11	258	15.1	0.13	2.2	0.9	C1
840501	220	3.54	37-16.55	121-40.48	5.94	2.26	26	265	15.0	0.16	1.6	3.3	C1
840501	4 0	16.21	37-16.53	121-40.65	9.56	2.39	24	265	15.2	0.16	2.0	1.9	C1
840501	1152	5.82	37-17.33	121-41.18	11.98	1.64	11	264	15.2	0.13	2.4	1.6	C1
840501	1518	45.41	37-16.56	121-39.23	6.06	2.67	26	267	13.5	0.18	1.5	3.8	C1
840501	1955	57.34	37-21.16	121-43.37	11.69	1.46	6	237	12.8	0.14	2.9	4.0	D1
840501	2323	10.20	37-13.82	121-39.96	8.23	2.62	26	288	17.7	0.18	1.1	3.1	C1
840501	2332	47.86	37-27.80	121-43.05	5.84	1.21	8	132	6.0	0.27	1.7	2.1	B1
840501	2338	53.98	37-27.84	121-42.35	5.70	1.84	18	131	5.9	0.22	0.7	0.8	B1
840502	1545	36.78	37-15.66	121-37.81	13.91	1.71	8	283	13.1	0.07	1.7	1.1	C1
840502	18 8	28.73	37-17.32	121-39.23	11.63	1.88	8	267	12.7	0.11	6.9	8.6	D1
840502	1918	9.74	37-15.00	121-39.96	15.97	1.76	10	282	16.2	0.14	2.0	2.2	C1
840502	444	23.20	37-18.77	121-40.96	10.23	2.61	23	253	13.9	0.17	1.8	1.3	C1
840502	448	29.97	37-26.63	121-39.24	3.93	1.86	7	226	10.8	0.09	1.3	3.0	C1
840502	5 3	57.25	37-18.00	121-40.57	11.19	2.85	18	259	13.9	0.12	1.4	0.7	C1
840502	557	41.85	37-21.42	121-42.15	8.06	1.87	9	227	13.5	0.10	1.7	3.2	C1
840502	7 1	40.24	37-22.22	121-40.83	5.46	1.34	10	210	12.2	0.13	1.3	1.2	C1
840502	734	19.07	37-20.63	121-40.37	5.21	1.81	10	230	12.4	0.11	1.5	1.3	C1
840502	8 1	4.15	37-17.14	121-38.30	10.97	1.78	8	269	11.7	0.10	2.7	2.0	D1
840502	1432	56.86	37-19.96	121-41.00	5.66	1.49	12	241	13.5	0.12	1.6	1.0	C1
840503	921	43.36	37-21.71	121-39.87	4.96	1.47	5	213	11.8	0.03	0.7	1.2	C1
840503	4 1	48.98	37-17.81	121-40.30	7.33	2.20	24	255	13.6	0.20	2.6	11.4	D1
840503	545	20.01	37-20.26	121-38.42	4.11	1.47	7	230	9.6	0.11	1.7	1.6	C1
840503	13 2	52.15	37-17.00	121-41.74	9.65	2.79	26	255	15.7	0.18	1.0	2.3	C1
840503	1125	31.61	37-18.51	121-40.12	5.34	2.05	15	249	12.9	0.08	0.9	0.6	C1
840504	1655	33.87	37-34.42	121-49.15	4.77	1.80	14	127	6.0	0.19	0.8	1.2	B1
840504	1842	58.51	37-17.02	121-41.61	8.84	2.74	40	121	3.4	0.19	0.5	0.5	B1
840505	15 1	25.56	37-17.95	121-41.58	6.81	1.83	10	170	4.9	0.12	1.1	0.8	C1
840505	2330	32.21	37-19.66	121-44.06	9.26	1.78	25	130	9.5	0.19	0.5	1.5	B1
840506	1532	7.84	37-38.88	121-48.51	8.31	1.37	26	77	1.7	0.12	0.5	0.5	A1
840506	2228	39.59	37-28.31	121-33.89	10.51	1.78	15	98	6.5	0.14	0.6	0.7	B1
840506	1129	8.82	37-18.83	121-42.94	7.61	2.32	30	126	7.3	0.18	0.6	2.0	B1
840506	1244	56.44	37-18.30	121-42.92	11.92	1.69	19	133	6.5	0.14	0.6	0.6	B1
840506	1437	48.97	37-18.63	121-42.59	8.88	1.47	13	145	6.7	0.20	1.2	2.2	C1
840506	1852	36.31	37-12.48	121-38.66	6.54	1.72	11	128	5.3	0.23	1.3	1.2	B1
840507	755	11.06	37-21.10	121-41.31	8.81	0.93	9	146	10.5	0.18	1.1	1.7	C1
840507	1220	41.72	37-17.34	121-37.37	6.34	1.78	14	130	5.6	0.11	0.6	0.7	B1
840507	1427	20.84	37-17.04	121-41.26	6.82	2.54	31	126	3.2	0.16	0.6	0.7	B1
840507	1634	14.39	37-17.10	121-41.25	8.71	1.61	12	129	3.3	0.14	0.8	0.9	B1
840507	18 8	21.43	37-15.85	121-37.73	8.95	1.92	15	136	3.9	0.17	0.8	0.8	C1
840507	2058	17.23	37-17.01	121-40.96	12.22	1.62	14	124	3.0	0.16	1.0	1.3	B1
840507	2120	52.97	37-20.13	121-36.23	4.87	1.72	7	153	8.8	0.14	3.4	6.0	C1
840507	2138	4.91	37-30.28	121-42.66	10.54	1.22	5	288	7.4	0.00	0.1	0.0	C1
840508	1148	48.44	37-8.22	121-36.16	8.87	2.08	16	162	2.2	0.21	1.2	1.4	C1
840508	1334	8.48	37-16.02	121-41.45	4.45	1.94	22	131	1.9	0.14	0.5	0.6	B1
840509	1 1	32.83	37-31.34	121-50.82	5.31	1.57	18	113	2.1	0.18	0.8	0.9	B1
840509	259	59.51	37-16.40	121-40.22	7.34	1.85	13	133	1.9	0.11	0.8	1.1	B1
840509	545	37.74	37-19.66	121-43.98	12.67	1.95	12	248	17.9	0.17	3.8	9.8	D1
840509	545	37.25	37-18.59	121-45.17	3.21	1.56	10	148	9.2	0.19	1.3	2.8	C1
840509	19 1	46.89	37-7.53	121-34.04	14.45	2.17	18	174	6.5	0.22	1.4	1.3	C1
840509	2310	56.06	37-20.38	121-40.81	4.06	1.56	5	144	9.1	0.22	2.4487.6	D1	
840510	110	40.77	37-14.87	121-38.83	5.42	2.45	24	126	2.5	0.12	0.5	0.5	B1
840510	3 7	12.59	37-9.20	121-34.78	7.75	2.70	18	169	4.1	0.10	0.6	0.6	B1
840510	5 7	4.75	37-16.79	121-42.11	11.24	1.82	18	157	3.6	0.12	0.7	1.0	B1
840510	549	3.37	37-21.97	121-42.66	4.45	1.84	6	145	12.5	0.07	0.6	1.2	B1
840510	613	13.63	37-18.61	121-41.42	6.84	2.19	27	131	2.6	0.17	0.5	0.7	B1
840510	18 6	29.53	37-19.38	121-44.09	7.11	1.85	18	158	15.3	0.12	0.9	35.3	C1
840510	2214	2.85	37-31.42	122- 6.29	1.06	1.74	6	254	14.9	0.09	1.2	2.6	C1
840511	447	38.18	37-54.32	121-48.60	14.41	1.78	17	173	9.0	0.12	1.1	1.5	C1
840511	625	53.87	37-15.38	121-40.45	6.82	2.70	28	121	6.2	0.17	0.6	0.7	B1
840511	644	13.66	37-14.65	121-39.76	24.58	1.89	18	120	1.7	0.04	7.1	2.0	C1
840511	2 6	27.08	37-19.16	121-43.93	12.66	1.51	9	167	8.6	0.29	2.7	4.3	C1
840511	2 9	51.86	37-20.06	121-43.89	11.75	1.58	18	143	9.9	0.17	0.6	0.8	C1

846511	3 8	26.73	37- 8.49	121-36.66	7.12	2.66	21 152	3.1 0.26	1.2	1.9 C1
846511	9 6	53.86	37-19.42	121-36.59	5.66	2.84	12 116	7.8 0.14	0.7	1.0 B1
846511	1457	43.22	37-16.86	121-40.05	6.74	1.86	13 138	2.5 0.10	0.7	0.5 B1
846511	1529	33.72	37-15.69	121-40.45	8.91	1.92	14 133	0.5 0.14	0.9	1.0 B1
846511	1534	7.97	37-19.69	121-43.67	11.46	1.95	27 136	9.2 0.14	0.4	0.5 B1
846511	1746	0.36	37-15.95	121-36.66	5.94	2.32	23 111	7.6 0.22	0.7	1.1 B1
846511	19 8	16.56	37-18.58	121-43.29	7.95	1.84	13 141	7.2 0.19	0.9	3.4 C1
846511	1929	16.67	37-30.13	121-43.14	10.33	1.76	15 96	7.9 0.06	0.4	0.4 B1
846511	2011	8.22	37-17.61	121-42.46	5.26	1.96	19 137	5.1 0.26	0.6	1.0 C1
846511	2326	6.36	37-16.64	121-41.31	7.25	2.77	29 120	2.6 0.15	0.5	1.0 B1
846512	1313	21.71	37-18.57	121-42.71	12.31	1.92	17 137	6.7 0.19	0.9	1.5 C1
846512	2016	13.36	37- 8.67	121-35.97	7.44	2.53	16 171	3.8 0.21	1.3	1.4 C1
846512	2148	35.70	37-19.39	121-39.67	4.61	2.88	17 116	7.3 0.06	0.3	0.5 B1
846513	114	29.66	37-16.63	121-41.37	6.21	2.05	13 139	2.6 0.12	0.8	0.9 B1
846513	154	24.27	37-17.32	121-42.14	11.64	2.14	13 143	4.3 0.13	1.0	0.7 C1
846513	827	36.63	37-20.74	121-42.59	6.27	1.76	18 150	10.3 0.13	0.6	1.3 B1
846513	1325	53.44	37-20.93	121-41.97	6.42	2.06	17 143	10.4 0.24	0.7	1.2 C1
846513	1455	6.55	37-26.76	121-41.87	18.97	1.75	11 144	18.8 0.26	1.0	1.8 C1
846513	1517	49.78	37-18.72	121-41.68	6.86	2.12	24 127	3.6 0.16	0.5	0.7 B1
846513	1614	15.69	37-26.46	121-41.44	8.26	1.47	8 236	5.3 0.10	1.0	1.1 C1
846513	1941	50.53	37-16.17	121-40.86	7.46	2.34	23 118	1.5 0.17	0.7	1.1 B1
846514	114	44.36	37-18.86	121-43.39	8.82	1.75	12 178	7.7 0.16	1.2	2.1 C1
846514	624	3.53	37- 9.46	121-35.21	7.27	2.51	18 167	3.4 0.17	0.9	1.2 C1
846514	634	52.45	37-19.36	121-42.63	9.44	1.61	18 125	7.9 0.16	0.5	1.4 B1
846514	1427	24.77	37- 9.46	121-36.66	8.75	1.97	17 149	1.4 0.24	1.3	1.5 C1
846514	21 4	23.85	37-14.62	121-40.27	8.98	2.00	18 120	1.8 0.16	0.6	1.1 B1
846515	2252	28.39	37-18.89	121-44.44	4.06	2.66	22 158	16.4 0.27	0.9	1.5 C1
846516	6 2	18.64	37-18.68	121-40.85	6.53	1.38	18 163	2.4 0.17	1.4	2.2 C1
846516	652	7.37	37-14.94	121-40.58	8.91	2.07	14 133	1.0 0.14	0.9	1.0 B1
846516	856	53.27	37-14.56	121-41.35	7.66	1.63	15 131	2.2 0.20	0.9	1.3 B1
846516	17 9	28.94	37-18.21	121-42.36	7.95	2.12	26 150	5.9 0.34	8.3	28.5 D1
846516	2143	33.90	37-12.86	121-36.95	5.56	1.73	9 161	5.8 0.40	3.0	2.5 C1
846517	829	47.73	37-39.55	121-44.89	8.11	1.76	26 52	4.3 0.14	0.3	0.4 A1
846517	110	52.67	37-21.20	121-22.16	18.46	2.03	17 264	14.5 0.20	1.3	1.2 C1
846517	843	3.86	37-17.33	121-41.86	7.14	2.96	38 122	4.1 0.19	0.5	1.4 B1
846517	1414	2.66	37-18.89	121-43.66	4.31	2.53	32 129	8.0 0.24	0.7	0.9 B1
846517	1557	45.51	37-17.82	121-42.61	6.83	2.55	22 129	15.0 0.32	1.0	3.1 C1
846517	1651	51.07	37-17.62	121-42.58	2.71	1.58	7 137	8.2 0.14	1.2	1.9 C1
846517	1756	49.85	37-16.02	121-36.91	26.13	1.34	5 232	9.3 0.31	14.3	6.0 D1
846518	17 6	3.74	37-29.72	121-51.21	6.89	1.50	17 186	3.2 0.13	0.5	0.5 B1
846518	1930	24.67	37-16.41	121-41.06	10.62	2.30	34 125	2.1 0.20	0.6	0.7 B1
846519	956	49.48	37-28.42	121-45.70	6.12	1.63	9 189	4.2 0.08	0.6	0.7 B1
846519	1221	54.64	37-27.59	121-45.75	7.55	1.54	26 83	3.4 0.15	0.5	0.7 B1
846519	1539	34.33	37-14.23	121-40.22	8.17	1.76	17 124	2.3 0.18	0.5	1.2 B1
846519	1654	7.59	37-20.66	121-44.10	12.41	1.82	18 155	10.1 0.13	0.5	0.8 B1
846519	1752	4.99	37-20.25	121-44.26	11.79	1.99	30 138	10.6 0.18	0.5	0.5 C1
846519	1754	51.10	37-20.69	121-44.13	12.15	1.72	23 156	10.2 0.14	0.5	0.7 B1
846520	916	20.42	37-16.56	121-42.67	7.06	1.74	19 130	3.3 0.15	0.5	1.1 B1
846520	412	5.67	37-19.04	121-38.95	6.63	1.62	11 121	6.9 0.15	1.0	1.5 B1
846520	444	17.67	37-53.71	121-53.55	7.28	1.81	18 217	12.2 0.16	0.5	2.9 C1
846520	448	36.99	37-16.70	121-42.04	6.97	1.69	18 130	3.4 0.16	0.6	0.8 B1
846520	2143	49.73	37-20.82	121-42.15	4.42	1.78	19 143	10.3 0.16	0.6	0.9 C1
846521	2154	53.06	37-37.96	121-47.21	8.34	1.56	19 74	2.9 0.15	0.5	0.4 B1
846521	1415	59.16	37-16.35	121-41.28	6.93	1.86	14 130	2.1 0.15	0.6	0.7 B1
846521	1727	47.26	37-17.89	121-42.39	6.62	1.38	8 159	5.4 0.15	1.5	2.2 C1
846521	2311	39.53	37-16.16	121-35.57	7.58	2.21	14 184	2.9 0.19	0.7	0.8 B1
846522	149	3.50	37-33.73	121-41.51	7.33	1.30	12 83	1.1 0.05	0.2	0.2 A1
846522	254	14.77	37-15.65	121-41.05	7.76	2.75	28 133	1.1 0.17	0.6	1.1 B1
846522	330	3.63	37-18.10	121-42.75	8.14	1.68	14 156	6.6 0.15	1.0	1.2 C1
846523	440	34.48	37-32.84	121-51.02	6.56	1.13	7 211	6.9 0.07	0.5	1.0 C1
846523	723	23.58	37-26.71	121-41.91	10.47	1.51	8 156	10.0 0.19	1.5	4.5 C1
846523	2141	31.23	37-16.44	121-41.42	10.44	2.34	31 120	2.4 0.20	0.6	0.9 B1
846524	241	23.00	37-21.62	121-43.46	6.66	1.56	7 173	11.3 0.18	1.7	2.4 C1
846524	728	41.03	37-17.56	121-42.45	2.06	1.57	13 132	4.9 0.19	0.7	2.1 B1
846524	8 0	54.84	37-28.51	122- 8.84	4.06	2.49	31 242	22.0 0.30	1.6	1.9 C1
846524	1641	3.90	37-23.42	121-42.63	4.06	1.28	6 205	10.4 0.14	1.62	41.5 D1
846525	1929	38.09	37-24.64	121-41.30	12.98	1.80	14 119	8.1 0.20	0.9	1.2 B1
846601	327	27.21	37-17.84	121-41.46	11.79	1.83	8 177	14.7 0.07	0.6	0.7 B1
846602	724	7.98	37-30.06	121-48.83	9.66	1.84	24 56	1.4 0.16	0.5	0.4 B1
846602	2055	57.48	37-50.96	121-46.90	11.95	1.35	10 142	4.6 0.14	1.1	0.8 C1

840602	11	6	6.18	37-11.51	121-39.35	6.38	2.18	19	187	4.3	0.20	0.8	0.9	B1
840602	1119	19.58	36-56.97	121-36.05	12.95	2.51	8	229	14.4	0.20	5.2	0.7	D1	
840602	1732	6.91	37-17.09	121-41.82	6.45	2.78	38	122	3.7	0.19	0.5	0.9	B1	
840602	2114	54.81	37-14.60	121-40.29	4.80	1.63	6	179	1.6	0.13	1.4	0.9	C1	
840603	023	55.96	37-15.44	121-40.46	7.67	2.59	31	115	0.2	0.15	0.5	0.9	B1	
840603	1	1	54.13	37-21.01	121-44.13	8.69	1.25	7	178	11.7	0.20	2.8	7.8	C1
840603	111	4.53	37-32.67	121-51.31	4.67	1.84	18	97	3.0	0.17	0.6	0.8	B1	
840603	310	47.49	37-17.75	121-43.35	2.23	1.59	9	183	8.1	0.18	1.3	3.0	C1	
840603	721	57.94	36-58.27	121-31.33	12.46	2.73	17	210	11.4	0.19	1.5	1.3	C1	
840603	23	2	40.28	37-17.45	121-36.74	4.47	1.35	10	154	6.5	0.07	0.5	0.6	B1
840604	0	2	14.83	37-16.84	121-40.63	7.63	2.81	36	117	2.2	0.18	0.6	1.1	B1
840604	322	0.07	37-16.89	121-41.53	11.59	2.12	24	127	3.2	0.16	0.6	0.5	B1	
840604	1012	0.12	37-12.22	121-37.37	4.00	1.87	8	186	23.7	0.07	1.0	1.5	B1	
840604	1623	30.26	37-16.81	121-42.06	6.13	1.27	6	183	3.6	0.22	1.8	3.0	C1	
840605	956	16.16	37-31.29	121-39.47	9.02	1.20	9	103	5.4	0.07	0.5	0.5	B1	
840605	11	2	3.96	37-32.35	121-41.35	8.46	1.57	21	78	3.1	0.12	0.3	0.4	A1
840605	853	28.48	37-14.63	121-40.05	7.57	2.24	17	118	2.7	0.18	0.8	1.2	B1	
840605	4	1	22.83	37-18.54	121-43.12	6.41	1.84	18	136	7.0	0.17	0.6	1.2	B1
840605	440	45.02	37-16.90	121-40.90	5.18	2.05	23	118	2.6	0.15	0.5	0.8	B1	
840605	859	48.56	37-18.49	121-43.00	8.23	1.88	15	134	6.9	0.18	0.7	2.0	B1	
840605	1555	49.25	37-19.93	121-43.28	7.58	1.74	18	134	9.3	0.18	0.6	2.7	B1	
840605	2122	57.29	37-28.18	121-50.06	7.84	1.38	8	191	4.5	0.13	1.3	0.8	C1	
840605	2130	4.66	37-19.57	121-44.71	11.55	1.43	6	201	16.0	0.13	1.8	4.4	C1	
840605	22	9	49.79	37-14.48	121-37.87	9.25	1.73	10	280	4.1	0.12	1.7	1.3	C1
840605	2320	28.54	37-14.71	121-37.14	12.42	1.56	5	292	13.9	0.05	2.2	2.0	C1	
840606	213	2.93	37-15.46	121-38.00	6.30	2.11	20	134	3.5	0.20	0.7	1.0	B1	
840606	219	58.98	37-15.81	121-36.99	10.56	1.91	12	145	11.2	0.11	0.7	1.4	B1	
840606	746	28.44	37-18.52	121-41.78	6.65	1.93	19	129	2.9	0.16	0.6	0.8	B1	
840606	8	2	47.48	37-15.72	121-41.08	8.91	2.08	23	124	1.2	0.17	0.6	1.2	B1
840606	8	9	13.48	37-15.90	121-38.68	5.58	1.97	15	124	2.6	0.18	0.7	0.7	B1
840606	1025	29.17	37-15.77	121-38.65	6.17	1.98	13	125	2.6	0.12	0.6	0.6	B1	
840606	1630	32.32	37-18.03	121-37.46	10.73	1.82	18	138	11.6	0.12	0.8	1.3	B1	
840606	2248	38.92	37-19.32	121-43.61	9.25	2.25	31	136	8.6	0.20	0.6	1.5	C1	
840606	929	41.95	37-38.00	121-40.22	10.28	1.54	22	81	1.4	0.08	0.3	0.2	A1	
840606	118	6.06	37- 8.70	121-34.96	8.83	1.91	12	183	4.2	0.10	0.8	0.6	C1	
840606	630	15.96	37-16.24	121-40.95	11.93	1.72	15	124	1.7	0.16	0.8	0.7	B1	
840606	2349	15.34	37-16.56	121-39.22	8.37	1.31	11	115	2.6	0.18	1.0	1.1	B1	
840609	212	9.79	37-16.44	121-41.37	8.81	1.96	14	150	2.4	0.14	0.6	0.8	B1	
840609	4	4	3.46	37-26.88	121-50.31	7.18	2.34	30	144	3.5	0.26	0.7	1.6	C1
840609	12	6	38.44	37-15.56	121-38.29	8.83	1.85	14	143	3.0	1.62	9.7	12.5	D1
840609	1257	5.84	37-19.43	121-42.99	13.39	1.68	16	133	8.3	0.13	0.6	1.3	B1	
840609	1748	28.82	37-18.72	121-41.40	7.83	2.89	36	120	2.9	0.21	0.5	1.3	B1	
840609	2034	23.86	37-15.71	121-41.43	7.47	1.72	16	127	1.7	0.14	0.9	1.2	B1	
840610	430	9.28	37-15.76	121-38.42	8.74	1.93	17	128	2.9	0.15	0.6	0.6	B1	
840610	843	42.23	37-23.16	121-40.57	10.81	1.83	26	106	10.5	0.21	0.6	1.1	B1	
840610	1710	38.98	37-13.68	121-39.90	7.39	2.50	23	112	3.4	0.17	0.5	1.1	B1	
840610	1854	26.85	37-27.15	121-50.11	8.30	1.90	25	152	3.2	0.21	0.7	0.5	C1	
840611	458	47.04	37-17.16	121-42.17	8.38	1.62	16	151	4.1	0.18	0.6	1.0	C1	
840611	1228	5.94	37-18.18	121-40.99	12.19	1.58	15	124	1.6	0.13	0.8	0.8	B1	
840611	1334	47.25	37-25.15	121-41.78	11.67	1.77	27	112	7.6	0.15	0.5	0.8	B1	
840611	16	8	53.12	37-15.22	121-38.69	7.92	2.05	20	127	2.5	0.15	0.6	1.0	B1
840611	1837	50.70	37-19.44	121-43.82	10.24	2.43	36	120	9.0	0.20	0.5	1.0	B1	
840612	23	4	41.94	37-54.57	121-57.51	7.41	1.86	15	294	15.9	0.06	0.6	3.6	C1
840613	1241	6.15	37-15.02	121-40.77	7.10	1.74	19	147	1.0	0.15	0.6	0.7	B1	
840614	2136	29.94	37-26.41	121-38.47	9.30	2.51	32	87	4.2	0.25	0.7	1.4	B1	
840615	2	7	41.85	37-19.35	121-42.85	8.44	1.52	26	132	8.1	0.09	0.4	1.0	B1
840615	1550	1.17	37-18.87	121-42.92	11.38	2.84	24	126	7.4	0.14	0.4	0.5	B1	
840616	8	9	32.98	37-30.10	121-37.82	12.51	1.29	7	98	8.4	0.08	0.7	1.4	B1
840616	350	27.58	37-17.05	121-41.78	6.92	2.96	36	122	3.7	0.21	0.5	1.0	B1	
840616	1729	50.75	37-21.06	121-44.72	10.34	2.31	33	132	12.0	0.22	0.7	1.0	B1	
840616	2117	54.02	37-39.63	122- 6.22	13.98	2.06	15	284	5.6	0.16	5.0	3.5	D1	
840617	1225	45.77	37-39.44	122- 5.40	11.61	1.85	25	258	4.3	0.17	1.7	0.7	C1	
840617	1512	48.79	37-19.81	121-43.75	7.92	1.83	12	154	9.5	0.15	0.9	2.7	C1	
840618	727	31.14	37-15.46	121-50.85	2.26	1.80	16	175	15.5	0.15	0.8	2.4	C1	
840618	1328	21.42	37-25.12	121-50.33	3.45	1.96	24	184	5.0	0.16	0.6	0.6	C1	
840618	17	7	7.04	37-26.80	121-44.10	11.17	2.00	22	137	11.3	0.12	0.5	0.6	B1
840619	1745	19.67	37-27.56	121-37.22	18.76	1.60	6	119	11.2	0.06	1.0	3.5	B1	
840619	1532	18.27	37-14.85	121-38.58	8.85	1.31	8	129	2.9	0.18	1.1	1.2	B1	
840621	1115	37.77	37-15.45	121-38.52	6.46	1.63	12	128	2.7	0.16	0.8	0.8	B1	
840621	12	4	56.32	36-55.92	121-33.18	10.44	2.29	27	298	6.2	0.25	1.6	1.1	C1

840622	1159	15.66	37-37.71	121-55.14	7.64	2.63	36	110	3.6	0.21	0.5	0.9	B1
840624	1457	16.19	37-14.33	121-40.45	9.61	1.89	16	145	2.1	0.14	0.8	0.9	B1
840624	1516	56.41	37-14.29	121-41.14	8.37	2.63	17	144	2.5	0.19	0.8	1.4	C1
840624	2026	36.88	37-14.92	121-39.26	5.86	2.34	23	132	1.9	0.16	0.6	0.5	B1
840625	9 9	2.78	37-38.12	121-53.66	6.64	2.10	24	98	4.4	0.16	0.4	0.4	B1
840625	1613	23.81	37-42.38	122-11.98	4.99	2.86	33	280	15.3	0.21	1.4	1.8	C1
840626	824	26.76	37-16.52	121-41.34	11.44	2.14	25	142	2.4	0.15	0.6	0.5	B1
840626	9 8	7.65	37-24.48	121-49.77	2.77	2.28	28	165	5.5	0.18	0.6	0.8	C1
840626	23 1	25.27	37-18.37	121-38.63	7.88	2.12	18	134	3.4	0.12	0.6	1.0	B1
840627	1714	23.67	37-20.01	121-44.67	6.26	1.69	19	156	10.6	0.16	0.6	0.9	B1
840627	1731	56.21	37-20.01	121-44.16	7.43	1.70	19	154	16.1	0.12	0.6	2.2	C1
840627	2316	23.71	37-15.63	121-40.81	6.93	2.73	32	142	1.0	0.16	0.5	0.6	C1
840628	147	24.43	37-31.27	122- 6.43	1.66	1.90	9	255	15.2	0.11	1.2	2.8	C1
840628	16 7	52.99	37-16.18	121-41.46	7.92	1.95	14	155	2.1	0.17	0.7	1.2	C1
840628	2126	38.65	37- 1.92	121-32.52	11.56	1.86	13	190	15.4	0.20	2.0	1.4	C1
840629	1754	33.25	37-31.38	122- 6.81	0.76	1.33	8	258	15.1	0.10	1.3	3.6	C1
840629	1831	36.27	37-38.48	122- 3.84	3.85	2.28	17	259	1.0	0.19	1.9	0.9	C1
840629	1918	52.56	37-12.43	121-39.23	6.86	1.75	13	144	5.6	0.20	1.0	1.0	C1
840630	2252	28.01	37-15.56	121-40.93	7.27	2.25	39	142	0.9	0.21	0.6	1.2	C1

LLSN SEISMIC DATA

SEISMIC EVENTS FOR 'THIRD QUARTER' 1984

DATE	ORIGIN	LAT N	LONG W	DEPTH	MAG	NO GAP	DMIN	RMS	ERH	ERZ	QM
840701	1947	8.38	37- 9.91	121-39.86	5.08	2.06	15 149	3.6 0.20	1.1	1.1	C1
840702	1 0	45.42	37-39.48	121-43.21	8.09	1.53	24 55	2.3 0.12	0.4	0.4	A1
840702	1825	28.48	37- 9.86	121-39.87	4.86	2.07	14 149	3.6 0.22	1.1	1.1	C1
840702	1847	46.14	37-13.66	121-37.58	8.50	1.85	6 279	5.3 0.22	10.3	6.8	D1
840707	017	10.57	37-17.21	121-42.19	5.78	2.37	34 144	4.2 0.18	0.5	0.8	C1
840707	235	4.42	37-17.56	121-42.04	3.79	1.63	7 205	4.5 0.16	3.3	4.7	D1
840711	1317	43.13	37-36.19	121-47.65	8.32	1.66	18 78	3.6 0.18	0.5	0.7	B1
840713	125	45.42	37-35.32	121-44.50	10.00	1.66	6 137	3.6 0.01	0.1	0.2	B1
840713	220	7.08	37-35.42	121-44.59	9.61	1.23	5 139	3.4 0.01	0.2	0.3	C1
840713	222	45.65	37-19.78	121-43.51	7.06	0.88	8 158	9.3 0.16	1.6	6.2	C1
840713	1221	14.14	37-36.13	121-50.12	0.28	1.86	23 86	2.7 0.16	0.4	0.5	B1
840713	2019	51.06	37-15.83	121-41.19	6.24	1.68	12 150	1.4 0.15	0.8	1.1	C1
840713	22 4	57.12	37-26.16	121-48.38	6.08	1.66	18 185	1.8 0.08	0.4	0.2	B1
840713	12 8	16.34	37-36.04	121-50.40	2.46	3.18	39 89	2.9 0.33	0.6	1.1	B1
840714	637	51.02	37-25.00	121-32.62	9.63	1.77	15 149	6.2 0.10	0.8	1.1	B1
840715	038	5.71	37-14.96	121-48.84	6.49	2.06	19 147	1.0 0.15	0.8	0.6	C1
840716	351	6.18	37-19.86	121-44.75	7.44	1.51	6 184	10.3 0.12	1.4	4.4	C1
840716	1850	30.42	37-15.04	121-40.02	6.71	2.35	31 140	0.9 0.16	0.8	0.6	C1
840717	1423	5.86	37-48.84	121-39.91	7.87	1.48	13 230	2.5 0.10	1.1	1.3	C1
840717	230	8.22	37-36.86	121-46.00	4.44	1.39	18 85	0.9 0.15	0.5	0.6	B1
840717	1624	49.80	37-17.38	121-42.11	5.31	1.85	17 150	4.4 0.13	0.7	0.8	B1
840717	1753	4.57	37-17.10	121-41.99	6.06	2.26	27 150	3.9 0.15	0.8	0.8	C1
840717	2012	4.53	37-35.98	121-49.63	8.07	1.91	17 86	3.1 0.17	0.5	0.6	B1
840717	2322	3.64	37-43.82	122-14.86	9.89	2.15	24 273	29.1 0.18	4.0	1.5	D1
840718	1339	8.37	37-36.51	121-46.06	3.90	1.56	23 64	1.4 0.19	0.5	0.5	B1
840718	721	3.43	37-43.76	122-15.36	7.46	2.05	20 274	20.9 0.15	3.7	3.3	D1
840718	1957	52.45	37-14.91	121-39.96	5.54	1.73	12 141	1.2 0.13	0.8	0.6	B1
840719	110	59.62	37-17.28	121-41.67	4.00	1.50	8 154	15.2 0.19	1.3	2.6	C1
840719	2026	35.74	37-33.70	121-48.91	4.59	1.23	10 76	6.7 0.08	0.4	0.9	B1
840720	712	26.17	37-19.19	121-42.98	8.54	1.97	29 144	7.9 0.19	0.7	1.6	C1
840721	7 4	52.28	37-34.02	121-38.91	6.51	1.23	11 173	3.1 0.09	0.5	0.4	B1
840721	2346	54.96	37-17.03	121-41.56	12.77	1.71	15 148	3.4 0.14	0.7	1.2	B1
840722	1219	9.38	37-15.84	121-48.45	5.66	2.06	29 138	0.4 0.17	0.6	0.6	C1
840722	1741	54.58	37-17.66	121-44.86	5.17	1.30	9 166	6.8 0.20	1.3	2.6	C1
840722	1838	21.65	37-24.71	121-50.04	3.51	1.96	18 196	5.3 0.18	0.9	0.8	C1
840722	23 5	59.65	37-15.89	121-40.00	5.56	2.10	24 139	0.9 0.16	0.5	0.4	B1
840723	0 4	5.62	37-11.45	121-36.92	6.51	1.63	13 156	3.2 0.07	0.5	0.4	B1
840723	427	4.82	37-19.21	121-42.89	11.11	2.02	21 158	7.7 0.12	0.6	0.7	B1
840723	921	14.99	37-36.46	121-48.85	0.28	2.16	29 75	2.8 0.22	0.4	0.6	B1
840723	1455	38.53	37-21.17	121-44.38	10.55	2.11	29 148	12.1 0.18	0.6	0.8	C1
840724	127	14.81	37-38.93	121-41.33	9.19	1.21	10 139	1.5 0.05	0.4	0.3	B1
840724	1846	7.86	37-34.68	121-44.30	9.11	1.31	20 59	4.9 0.16	0.5	0.7	B1
840724	1041	48.22	37-28.28	121-42.22	6.36	1.46	15 123	4.7 0.21	0.8	1.0	B1
840724	1044	35.68	37-28.25	121-42.18	6.33	1.36	14 124	4.6 0.21	0.8	1.0	B1
840724	2024	8.74	37-18.05	121-42.21	6.28	1.69	13 152	5.5 0.16	0.9	1.1	C1
840725	842	35.41	37-19.65	121-42.77	7.08	1.15	9 152	8.5 0.20	1.3	4.3	C1
840727	1110	16.78	37-29.79	121-43.33	9.39	1.33	12 99	6.6 0.15	0.7	1.7	B1
840727	13 0	46.91	37-15.20	121-40.16	8.85	1.72	17 143	0.6 0.14	0.8	0.9	B1
840728	1017	16.97	37-39.37	121-40.20	6.70	1.06	13 66	1.1 0.04	0.2	0.2	A1
840728	2332	8.77	37-35.17	121-44.46	10.06	1.10	13 125	3.9 0.05	0.2	0.2	B1
840728	421	8.39	37-36.01	121-49.75	0.49	1.69	19 83	3.0 0.16	0.5	0.7	B1
840728	1218	7.70	37-22.34	121-48.33	7.33	1.58	14 186	8.8 0.21	1.3	2.9	C1
840728	1250	32.70	37-46.29	121-59.80	3.56	1.69	10 238	4.9 0.21	3.0	1.4	D1
840728	2247	58.16	37-37.11	122- 2.45	0.53	2.20	14 231	3.3 0.12	1.2	1.1	C1
840729	2659	3.02	37-15.45	121-40.98	8.67	2.66	36 142	0.9 0.20	0.6	1.1	C1
840729	21 5	18.23	37-15.59	121-41.17	8.77	2.87	36 142	1.2 0.18	0.5	1.0	C1
840730	219	56.94	37-15.97	121-40.27	8.53	1.99	25 135	0.8 0.13	0.6	0.8	B1
840730	355	41.32	37-16.54	121-42.09	6.68	1.66	21 151	3.2 0.10	0.4	0.5	B1
840730	4 1	56.09	37-16.57	121-41.52	6.81	1.60	15 149	2.7 0.13	0.7	0.7	B1
840730	431	1.93	37-16.38	121-41.24	6.86	2.36	30 142	2.1 0.16	0.6	0.7	C1
840730	841	45.28	37-35.58	121-49.91	0.72	1.72	19 90	3.7 0.22	0.4	0.6	B1
840730	934	9.62	37-36.05	121-49.87	0.46	1.58	16 88	2.9 0.16	0.5	0.7	B1

840731	7 2	17.27	37-36.07	121-48.71	6.48	1.53	13	145	2.9	0.15	0.8	1.1	C1
840731	1943	47.99	37-15.28	121-46.57	6.68	2.78	34	130	0.5	0.16	0.6	0.6	C1
840731	2059	16.20	37-22.28	121-46.00	10.14	3.07	30	140	0.4	0.18	0.6	1.1	C1
840801	238	25.86	37-15.86	121-41.65	6.62	2.27	26	144	2.0	0.16	0.7	1.1	C1
840801	238	25.86	37-15.86	121-41.65	6.62	2.07	18	148	3.8	0.13	0.6	0.6	B1
840801	1229	17.29	37-17.32	121-41.43	6.98	1.90	23	145	2.2	0.13	0.6	0.6	B1
840801	1458	9.66	37-16.43	121-41.25	6.76	1.82	30	134	8.7	0.15	0.5	0.8	B1
840802	1849	8.66	37-22.68	121-45.88	10.59	1.76	15	125	6.1	0.09	0.5	0.5	B1
840803	13 8	52.75	37-39.39	121-46.89	6.57	1.17	8	112	1.4	0.03	0.2	0.2	B1
840803	213	32.86	37-16.43	121-41.84	6.96	1.85	16	125	2.1	0.14	0.7	0.6	B1
840803	1917	48.71	37-17.62	121-42.56	2.85	1.62	8	190	5.2	0.17	1.7	2.1	C1
840804	637	57.76	37-29.12	121-42.56	10.84	1.31	13	186	9.3	0.06	0.4	0.5	C1
840804	1226	32.03	37-18.66	121-41.25	11.37	1.76	15	125	6.1	0.09	0.5	0.5	B1
840804	2341	48.81	37-26.19	121-43.16	10.48	1.58	9	153	9.7	0.17	1.2	3.2	C1
840805	9 6	39.89	36-59.92	121-44.86	10.21	3.23	37	163	6.8	0.34	1.6	1.1	C1
840806	636	17.53	37-14.52	121-43.17	2.32	1.89	4	289	20.4	0.02			D1
840806	827	19.56	36-59.63	121-44.38	10.43	1.73	12	191	6.0	0.25	3.2	2.0	D1
840806	1125	7.56	37-18.21	121-41.71	5.82	1.76	15	127	5.5	0.17	0.7	1.1	B1
840807	857	28.98	37-37.16	121-49.97	3.75	1.76	18	63	6.8	0.36	1.1	0.9	B1
840808	617	4.53	37-17.52	121-41.99	5.14	1.88	18	129	4.5	0.16	0.7	0.8	B1
840808	1142	16.89	37-29.88	121-54.50	6.32	1.82	23	173	4.2	0.21	0.7	0.8	C1
840808	1313	55.56	37-22.46	121-45.74	7.79	1.94	34	142	9.2	0.22	0.7	1.5	C1
840809	844	42.03	37-21.09	121-43.92	10.18	2.01	27	125	11.1	0.18	0.5	1.1	B1
840809	1318	49.41	37-17.99	121-41.56	12.42	2.54	29	252	15.2	0.20	1.1	1.7	C1
840809	1318	49.81	37-18.57	121-42.01	9.73	2.45	22	248	15.5	0.20	1.3	1.5	C1
840810	1111	43.22	37-31.64	121-55.88	7.65	1.86	17	198	5.4	0.12	0.6	1.1	C1
840810	1614	42.84	37-15.44	121-41.22	5.43	1.54	9	155	1.3	0.17	1.0	1.1	C1
840811	0 2	40.45	37-14.86	121-46.34	5.87	2.03	22	129	1.1	0.15	0.6	0.6	B1
840811	123	17.22	37-14.64	121-39.83	6.67	1.82	14	141	1.7	0.13	0.7	0.6	B1
840811	535	13.00	37-19.46	121-43.02	8.68	2.25	36	126	8.4	0.21	0.6	1.7	B1
840811	544	58.77	37-19.46	121-43.08	9.49	1.84	21	126	8.4	0.17	0.6	1.4	B1
840811	7 0	16.23	37-10.07	121-36.89	8.86	1.97	17	184	1.0	0.25	1.5	1.4	C1
840811	2033	2.62	37-16.45	121-41.98	5.49	2.38	24	151	3.0	0.11	0.4	0.6	B1
840812	126	52.06	37-17.78	121-41.90	2.47	1.82	11	151	4.9	0.18	1.0	2.0	C1
840812	659	57.21	37-30.32	121-47.81	4.00	1.56	4	132	6.0	0.46			D1
840812	126	52.18	37-17.36	121-41.36	10.54	2.00	14	148	15.2	0.12	0.7	1.3	B1
840812	1049	7.21	37-26.63	121-38.37	9.10	1.77	30	85	3.9	0.21	0.6	1.1	B1
840812	1234	30.83	37-26.25	121-38.19	10.61	2.63	34	78	4.6	0.21	0.6	1.0	B1
840812	2334	6.36	37-38.14	121-51.50	9.19	1.85	5	159	2.9	0.07	1.6	1.4	C1
840813	951	36.07	37-16.63	121-41.83	9.77	2.99	35	122	3.1	0.20	0.6	1.0	B1
840813	1630	30.20	37-25.07	121-49.45	6.21	2.06	14	191	4.3	0.10	0.5	0.4	C1
840814	555	34.92	37-26.10	121-37.86	9.17	2.37	39	100	5.0	0.17	0.4	0.9	B1
840814	143	58.52	37-26.47	121-47.85	6.00	2.30	36	146	1.1	0.23	0.6	0.9	C1
840814	555	34.97	37-26.33	121-38.33	10.44	2.96	41	78	4.4	0.23	0.5	0.9	B1
840815	626	40.46	37-18.62	121-43.21	8.68	2.52	34	127	7.2	0.18	0.6	1.8	B1
840815	8 4	57.96	37-24.07	121-46.67	10.05	2.00	26	153	4.3	0.17	0.6	0.9	C1
840816	534	26.44	37-39.31	121-41.21	9.61	1.21	7	289	3.6	0.03	0.4	0.3	C1
840816	6 4	23.16	37-37.00	121-46.68	3.92	1.56	15	105	2.9	0.12	0.4	0.3	B1
840816	2045	34.71	37-15.62	121-40.24	6.96	3.05	35	115	0.3	0.15	0.6	0.6	B1
840816	2142	17.29	37- 9.04	121-35.49	8.81	2.22	14	173	3.2	0.15	1.0	1.0	C1
840816	2339	53.70	37-22.01	121-48.10	1.63	2.23	24	145	16.7	0.19	0.7	1.0	C1
840817	124	15.50	37-14.61	121-39.15	8.13	2.33	17	122	2.4	0.11	0.7	0.7	B1
840817	148	52.19	37-14.41	121-39.34	10.31	1.83	11	131	2.4	0.14	1.0	1.7	B1
840818	1154	28.32	37-14.52	121-40.13	6.68	2.06	28	113	1.8	0.20	0.7	0.8	B1
840819	734	37.92	37-17.78	121-42.28	7.79	1.92	17	131	5.1	0.19	0.7	1.0	B1
840820	648	32.84	37-16.62	121-37.57	8.84	1.79	13	133	4.6	0.12	0.7	0.7	B1
840821	658	52.14	37-16.33	121-46.94	11.61	2.18	28	124	1.8	0.19	0.7	0.6	B1
840821	20 1	35.64	37-14.36	121-39.28	10.81	2.49	31	121	2.6	0.45	1.8	1.5	C1
840823	1144	32.11	37-26.66	121-43.12	11.73	1.39	11	153	7.0	0.12	0.7	0.9	B1
840823	1159	1.63	37-28.47	121-42.54	11.96	1.34	15	107	6.5	0.15	0.7	0.8	B1
840823	12 7	39.79	37-28.25	121-42.61	11.73	1.59	20	104	8.8	0.17	0.6	0.9	B1
840824	1 5	55.41	37-18.26	121-38.77	10.85	3.10	26	254	11.2	0.26	1.5	0.5	C1
840824	1 5	54.43	37-15.21	121-39.96	8.72	3.14	35	112	8.8	0.17	0.6	0.7	B1
840824	1 6	0.34	37-34.08	121-44.02	4.96	2.83	10	213	4.7	0.53	17.2	43.5	D1
840824	217	24.04	37-33.06	121-52.21	9.33	1.27	13	166	3.3	0.15	0.9	1.2	C1
840826	518	43.84	37- 9.18	121-39.94	8.81	2.10	27	152	2.5	0.23	0.9	0.8	C1
840827	120	57.30	37-30.77	121-55.39	7.73	2.42	35	178	4.7	0.16	0.5	0.9	B1
840827	1036	49.29	37-29.12	121-43.07	5.77	1.48	11	110	5.0	0.22	0.8	1.3	B1
840828	910	31.43	37-28.94	121-46.89	3.87	1.71	13	179	1.4	0.06	0.5	0.2	B1
840829	2 0	8.18	37-24.80	121-42.20	8.81	1.43	27	117	8.5	0.28	0.8	1.5	B1

840830	1515	26.00	37-21.90	121-42.07	11.67	2.21	31	122	12.2	0.17	0.5	0.5	B1
840830	17 5	59.04	37-20.90	121-39.04	12.14	1.34	12	120	10.2	0.17	1.3	2.0	B1
840831	234	59.06	37-27.78	121-41.47	6.66	1.47	20	130	3.8	0.30	1.2	1.4	C1
840831	248	34.96	37-15.25	121-40.65	6.87	2.94	37	122	0.6	0.17	0.5	0.6	B1
840831	234	59.06	37-27.78	121-41.47	6.66	1.47	20	130	3.8	0.30	1.2	1.4	C1
840831	248	34.96	37-15.25	121-40.65	6.87	2.94	37	122	0.6	0.17	0.5	0.6	B1
840901	14 0	53.03	37-19.17	121-42.04	9.64	2.54	30	132	7.8	0.18	0.7	1.4	B1
840901	2253	41.92	37-29.02	121-43.00	12.25	1.45	10	145	8.1	0.07	0.5	0.5	B1
840902	1612	14.65	37-16.53	121-37.87	7.34	2.59	37	130	4.2	0.15	0.4	0.9	B1
840902	1723	10.50	37-16.71	121-37.70	6.99	2.26	24	128	4.5	0.14	0.5	0.6	B1
840902	2054	29.55	37-28.51	121-42.16	9.92	1.89	25	79	4.5	0.13	0.4	0.6	A1
840903	319	42.51	37-27.03	121-47.59	9.10	1.99	34	107	0.5	0.21	0.6	0.6	B1
840903	1244	17.35	37-15.52	121-37.97	7.65	2.81	40	133	3.5	0.17	0.5	1.1	B1
840903	1832	45.00	37-18.91	121-42.94	10.64	2.14	33	133	7.4	0.17	0.5	0.7	B1
840904	2332	48.02	37-30.45	121-34.23	7.86	1.56	13	146	11.3	0.13	0.5	1.6	B1
840904	17 2	3.00	37-15.38	121-39.78	7.47	3.10	41	119	0.9	0.19	0.6	1.0	B1
840905	1116	40.79	37-14.69	121-40.52	6.92	2.10	19	122	1.4	0.18	0.7	0.7	B1
840905	14 5	25.97	37-16.94	121-41.77	10.90	2.70	34	128	3.5	0.20	0.6	0.7	B1
840905	1952	8.58	37- 9.65	121-37.10	8.46	2.88	30	146	0.6	0.22	0.9	1.1	C1
840905	1740	31.53	37-29.67	121-41.50	9.37	1.74	24	104	4.0	0.13	0.5	0.7	B1
840909	1423	30.70	37-24.76	121-41.06	10.41	1.86	22	116	7.7	0.21	0.7	1.1	B1
840910	240	20.52	37-27.19	121-47.79	7.15	2.07	34	148	10.0	0.24	0.7	4.1	C1
840910	1031	0.35	37-17.11	121-41.09	11.11	2.43	33	128	3.6	0.23	0.7	0.7	B1
840910	1624	47.52	37-17.03	121-41.54	7.26	2.55	37	127	3.4	0.20	0.5	1.3	B1
840910	1633	37.31	37-17.23	121-41.95	6.96	2.10	25	129	4.0	0.13	0.4	0.6	B1
840910	19 6	52.82	37-28.25	121-40.07	8.25	1.26	10	137	2.2	0.10	0.7	0.7	B1
840910	2334	21.63	37- 8.23	121-45.71	10.72	2.81	38	170	6.7	0.41	1.7	1.2	C1
840911	829	24.10	37-17.28	121-41.50	6.92	2.21	30	127	3.8	0.16	0.5	0.7	B1
840911	1643	56.06	37-27.57	121-51.45	1.54	1.89	17	191	5.2	0.13	0.5	0.6	C1
840911	2258	2.92	37-27.83	121-51.12	1.78	1.72	22	168	4.9	0.28	0.9	1.0	C1
840912	2 8	56.23	37-29.34	121-47.21	9.67	1.70	27	101	4.3	0.14	0.4	0.6	B1
840912	647	48.12	37-51.02	122- 2.87	3.70	1.96	21	259	13.4	0.21	1.6	1.8	C1
840912	2230	21.59	37-20.38	121-43.30	8.83	2.36	37	133	10.1	0.25	0.6	1.1	B1
840913	1655	45.83	37-37.65	121-41.41	4.71	2.04	29	49	1.6	0.15	0.3	0.3	A1
840913	2012	51.31	37-36.74	121-48.96	4.57	1.42	21	84	1.0	0.17	0.4	0.4	B1
840913	1717	40.99	37-29.96	121-44.77	11.38	2.03	29	140	12.1	0.17	0.5	0.7	C1
840913	1724	31.20	37-26.83	121-44.88	10.77	2.49	27	159	12.0	0.22	0.7	1.0	C1
840914	5 0	28.83	37-26.97	121-31.00	8.48	2.06	31	114	2.3	0.23	0.6	0.9	B1
840914	1 1	5.65	37-30.01	121-48.85	6.77	2.06	18	171	5.5	0.19	1.0	1.0	C1
840914	1 1	4.86	37-29.47	121-48.29	4.86	2.15	8	206	13.6	0.39	9.8	22.7	D1
840914	717	37.87	37-34.88	121-48.71	18.39	1.72	22	78	5.4	0.12	0.5	0.5	A1
840914	1219	25.50	37-26.89	121-47.23	9.38	2.07	33	105	1.1	0.18	0.5	0.6	B1
840914	15 9	43.76	37-20.23	121-41.29	3.84	2.16	29	123	8.9	0.21	0.5	1.0	B1
840915	1441	42.42	37-18.36	121-41.12	6.48	2.25	29	125	2.0	0.18	0.6	0.6	B1
840916	226	32.88	37-33.38	121-41.30	8.93	1.87	30	71	1.3	0.22	0.5	0.4	B1
840918	2859	48.26	37-32.48	121-46.75	7.71	1.73	19	64	8.4	0.19	0.6	1.2	B1
840918	2125	56.74	37-29.02	121-51.49	10.48	1.75	15	185	4.3	0.11	0.5	0.6	C1
840918	23 3	27.28	37-32.45	121-46.57	7.16	1.68	18	78	8.6	0.24	0.7	1.7	B1
840919	556	59.62	37-51.46	122-18.53	8.72	3.03	37	293	34.2	0.23	1.4	1.2	C1
840919	1959	57.62	37-25.21	121-38.32	12.40	2.65	19	183	12.2	0.07	0.3	0.5	B1
840920	735	57.84	37-15.87	121-38.14	7.00	1.97	20	131	3.4	0.18	0.6	0.8	B1
840922	1315	18.47	37-18.25	121-41.81	7.63	1.88	20	128	5.6	0.18	0.6	1.9	B1
840922	1331	23.93	37-15.16	121-40.35	7.36	1.96	20	121	0.6	0.20	0.7	1.3	B1
840923	1449	37.39	36-53.25	121-31.33	10.50	2.62	28	240	6.1	0.31	2.3	1.3	D1
840923	1722	31.05	37-22.52	121-46.80	10.98	1.75	13	190	8.6	0.17	1.0	1.2	C1
840925	7 2	31.94	37-25.00	121-48.87	6.78	2.03	19	181	3.0	0.14	0.6	0.4	C1
840925	2328	17.17	37-31.87	121-47.16	10.02	1.45	12	76	7.6	0.11	0.6	0.9	A1
840926	314	15.58	37-16.83	121-41.54	6.90	2.12	27	127	3.1	0.15	0.4	0.6	B1
840926	343	14.86	37-16.87	121-41.66	6.82	2.06	23	127	3.3	0.13	0.4	0.6	B1
840926	2946	6.33	37-19.87	121-43.94	6.09	2.99	33	130	9.7	0.19	0.6	2.2	B1
840926	2126	46.01	37-21.25	121-44.83	12.12	2.22	27	140	11.7	0.15	0.4	0.7	B1
840926	2227	25.25	37-19.92	121-43.95	11.59	1.87	17	154	9.8	0.15	0.6	0.8	C1
840926	2244	42.47	37-20.60	121-44.88	13.47	1.57	12	184	11.5	0.20	1.2	1.6	C1
840926	2333	29.20	37-21.05	121-45.07	11.82	1.86	13	185	11.9	0.15	0.6	0.9	C1
840927	414	1.47	37-33.91	121-37.98	9.46	1.89	13	174	3.3	0.09	0.4	0.4	B1
840927	2318	17.19	37-41.80	121-39.53	13.73	1.81	23	106	1.6	0.17	0.7	0.6	B1
840927	5 9	54.81	37-21.30	121-44.84	11.34	1.96	26	130	11.7	0.16	0.5	0.8	C1
840927	554	30.91	37-46.05	121-26.55	17.56	2.32	33	218	15.1	0.17	0.7	1.0	C1
840927	1553	52.61	37-16.85	121-41.40	6.86	2.09	26	127	3.1	0.15	0.5	0.7	B1
840928	456	1.34	37-20.11	121-44.00	11.89	2.05	28	137	14.1	0.14	0.4	0.4	B1

840928	1123	28.12	37-26.98	121-45.63	10.68	2.37	34	141	12.1	0.18	0.5	1.0	C1	
840929	1025	16.44	37-24.24	121-49.63	4.40	2.19	29	147	5.8	0.18	0.5	0.6	C1	
840929	11	7	39.92	37-33.00	121-47.37	3.79	1.64	21	111	7.9	0.23	0.6	0.9	B1
840929	1311	35.82	37-36.66	121-43.66	11.44	1.47	15	139	7.4	0.07	0.3	0.5	B1	
840929	1319	26.07	37-51.79	122-17.91	8.15	2.86	30	315	32.8	0.21	1.4	1.4	C1	
840929	1437	41.06	37-28.68	121-44.41	8.23	1.71	18	131	7.9	0.20	0.8	2.0	B1	

LLSN SEISMIC DATA

SEISMIC EVENTS FOR 'FOURTH QUARTER' 1984

DATE	ORIGIN	LAT N	LONG W	DEPTH	MAG	NO GAP	DMIN	RMS	ERH	ERZ CM
841001	415 24.87	37-16.89	121-41.37	11.68	2.65	19 120	3.1 0.17	0.7	0.7	B1
841001	913 37.88	37-27.76	121-51.68	0.13	1.98	19 175	0.7 0.15	0.6	0.8	C1
841002	830 14.51	37-20.61	121-44.44	6.02	1.73	15 186	11.3 0.15	0.7	1.6	B1
841004	2212 6.77	37-55.69	121-38.71	2.85	1.95	20 220	11.4 0.21	1.4	1.6	C1
841005	329 33.45	37-27.55	121-52.58	4.16	1.85	12 223	6.9 0.14	1.6	2.4	C1
841005	611 11.71	37-25.66	121-49.57	10.48	1.91	15 195	11.1 0.11	0.5	1.6	C1
841005	2036 8.19	37-15.05	121-49.97	6.19	2.68	28 117	1.2 0.18	0.6	0.7	B1
841005	22 3 56.36	37-15.28	121-49.84	6.25	2.11	23 123	0.5 0.14	0.6	0.6	B1
841005	2251 27.98	37-18.92	121-43.73	6.56	1.85	10 138	8.1 0.14	0.8	1.6	B1
841006	0 1 2.13	37-15.56	121-49.45	6.57	1.97	12 122	0.2 0.17	0.8	0.8	B1
841006	256 34.66	37-19.56	121-42.25	2.48	2.02	14 166	5.1 0.20	0.9	1.6	C1
841006	426 30.31	37-18.31	121-48.15	6.73	2.81	36 140	10.1 0.25	0.7	1.7	C1
841006	446 15.06	37-37.77	121-52.93	2.95	2.32	28 102	4.1 0.26	0.6	0.7	B1
841006	750 16.61	37-42.65	122- 1.49	1.50	2.29	24 218	7.2 0.25	1.3	2.2	C1
841006	8 3 15.17	37-52.78	121-58.98	0.65	1.91	19 284	13.1 0.15	1.6	1.2	C1
841006	949 58.99	37-50.48	122-20.30	8.61	2.64	23 302	33.8 0.23	1.9	1.6	C1
841006	1322 49.83	37-18.58	121-48.29	6.03	2.14	18 141	10.5 0.17	0.7	1.6	C1
841006	2246 14.79	37-19.20	121-43.51	8.42	2.52	35 128	8.3 0.21	0.6	2.2	B1
841006	2347 34.48	37-18.26	121-46.13	9.95	1.88	16 152	16.0 0.20	0.8	1.7	C1
841007	339 14.45	37-18.72	121-46.33	5.43	2.08	21 153	10.7 0.18	0.6	1.3	C1
841007	2043 24.71	37-20.97	121-43.37	6.58	2.19	27 126	11.1 0.22	0.7	1.5	B1
841007	2117 35.62	37-20.83	121-43.75	6.53	1.79	18 155	11.1 0.15	0.7	1.4	B1
841010	1243 52.52	37-19.44	121-38.33	5.27	2.10	29 166	7.9 0.25	0.6	0.9	B1
841013	1732 48.14	37-17.56	121-42.76	5.89	2.15	17 156	5.3 0.13	0.5	0.7	B1
841014	1035 1.11	37- 3.11	121-36.22	0.50	3.79	11 207	16.3 0.22	1.6	1.7	C1
841015	15 3 23.29	37-50.85	121-47.22	11.39	2.69	17 225	13.1 0.37	2.1	1.2	D1
841015	1459 9.84	37-21.22	121-47.11	4.79	2.08	11 205	14.6 0.13	0.7	1.6	C1
841018	611 8.73	37-18.78	121-43.62	7.61	2.47	25 150	7.8 0.22	0.7	2.6	C1
841020	1844 40.34	37-35.92	121-43.12	8.56	2.18	15 136	3.3 0.11	0.4	0.4	B1
841020	2152 53.32	37-35.53	121-43.62	7.83	2.44	15 87	4.3 0.19	0.6	0.6	B1
841020	039 47.02	37-21.02	121-44.29	9.32	2.51	20 143	11.8 0.20	1.1	1.6	C1
841020	1134 5.89	37-20.11	121-45.04	5.77	2.16	24 134	11.1 0.15	0.5	1.1	B1
841021	528 44.96	37-33.81	121-42.47	7.37	1.86	12 156	2.5 0.18	0.9	0.7	C1
841023	2 2 26.13	37-21.48	121-45.45	11.71	3.71	22 153	11.0 0.16	0.7	0.6	C1
841026	619 9.44	37-19.87	121-44.43	10.37	2.98	40 139	10.1 0.31	0.8	1.3	C1
841027	1946 38.57	37-17.05	121-39.36	8.93	2.96	38 118	3.3 0.22	0.6	0.9	B1
841028	921 4.85	37-17.36	121-42.11	0.63	1.97	11 135	4.4 0.20	0.7	1.0	B1
841028	1135 47.24	38- 2.95	121-59.84	4.06	3.12	32 291	20.7 0.58	5.1	8.1	D1
841028	1213 43.87	38- 3.33	121-53.66	4.06	3.96	16 316	28.3 0.22	0.9	17.9	D1
841028	1256 19.31	37-20.13	121-44.30	11.56	1.96	20 166	10.4 0.17	0.6	1.0	C1
841028	2120 11.93	37-16.56	121-41.46	6.32	2.14	16 154	2.6 0.18	0.8	1.2	C1
841029	755 35.22	37-59.25	122- 4.96	8.75	2.77	22 288	27.5 0.15	3.4	3.7	D1
841029	1012 39.12	37-28.12	121-42.97	8.54	1.63	12 126	5.8 0.21	0.9	1.5	B1
841029	1845 24.89	37-31.64	121-43.46	9.52	1.54	15 86	5.5 0.17	0.6	1.6	B1
841029	1946 24.96	37-14.77	121-46.31	8.17	2.31	18 124	1.3 0.21	0.8	0.9	B1
841029	2241 39.97	37-16.65	121-41.26	8.53	2.25	16 128	2.5 0.19	0.7	1.4	B1
841029	2328 20.14	37-18.99	121-43.27	13.18	1.96	14 157	7.8 0.19	0.9	1.5	C1
841029	2357 59.82	37-19.28	121-43.82	11.48	1.86	16 160	8.7 0.17	0.7	1.3	C1
841030	1348 10.94	37-45.96	121-43.36	13.11	2.15	32 71	4.0 0.23	0.8	0.7	B1
841030	852 10.48	37-35.98	121-43.24	7.51	2.16	33 54	3.3 0.15	0.3	0.3	B1
841030	249 49.00	37-17.47	121-41.98	6.56	2.07	19 129	4.4 0.19	0.7	1.1	B1
841030	1312 20.54	37-27.68	121-48.18	9.69	1.32	14 155	1.2 0.14	0.7	0.7	B1
841031	648 44.47	37-32.00	121-40.16	6.58	1.23	13 127	3.8 0.16	0.6	0.7	B1
841031	440 15.64	37-32.29	121-40.58	7.27	1.29	14 91	3.2 0.11	0.4	0.5	B1
841031	358 55.39	37-28.97	121-42.69	9.05	2.45	38 55	5.3 0.25	0.5	0.9	B1
841102	220 24.28	37-34.84	121-42.48	6.87	0.95	11 87	2.9 0.07	0.4	0.3	A1
841102	20 3 57.35	37-36.05	121-42.99	7.65	1.55	16 188	3.1 0.12	0.4	0.4	B1
841102	20 6 53.22	37-36.08	121-43.10	7.99	2.16	31 54	3.0 0.15	0.3	0.4	B1
841102	618 58.89	37-19.41	121-41.60	11.68	1.68	16 145	7.5 0.21	0.9	1.6	C1
841102	740 14.57	37-24.89	121-48.39	8.93	1.61	11 189	4.1 0.10	0.6	0.5	C1
841102	1024 47.10	37-15.79	121-40.76	6.75	3.27	38 117	0.9 0.21	0.6	0.8	B1
841103	4 1 2.26	37-38.08	121-42.94	7.65	1.19	28 59	3.0 0.12	0.2	0.3	A1

841103	524	20.83	37-36.28	121-42.89	8.11	1.09	7	148	2.6	0.02	0.2	0.1	B1
841104	8 0	5.74	37-28.88	121-42.80	10.95	1.71	24	114	5.5	0.11	0.3	0.5	B1
841104	825	30.14	37-29.15	121-42.93	10.62	1.73	22	109	5.7	0.14	0.4	0.7	B1
841105	911	45.40	37-36.87	121-46.28	4.02	1.40	23	84	1.2	0.18	0.4	0.4	B1
841106	311	8.61	37-31.64	121-46.14	7.98	1.26	13	98	4.4	0.09	0.4	0.4	B1
841106	1018	34.03	37-37.09	121-46.09	4.56	1.59	20	77	6.8	0.23	0.6	0.5	B1
841107	2635	32.36	37-28.74	121-43.29	9.22	2.20	28	76	6.2	0.22	0.6	0.9	B1
841108	223	10.80	37-38.24	121-46.00	10.37	1.88	24	69	1.1	0.16	0.5	0.4	B1
841108	2155	3.40	37-27.80	121-41.28	10.00	1.54	13	130	3.8	0.39	1.5	3.1	C1
841109	312	45.52	37-33.75	121-56.16	8.38	2.59	23	183	8.4	0.13	0.4	0.5	C1
841109	1334	5.81	37-29.20	121-53.81	4.13	1.70	14	208	4.3	0.15	0.6	1.5	C1
841110	1247	31.99	37-15.97	121-41.15	4.79	2.09	34	119	1.5	0.20	0.5	0.6	B1
841110	1328	8.82	37-29.03	121-43.92	10.74	2.45	33	129	10.0	0.22	0.6	1.0	B1
841112	1623	56.33	37-33.17	121-37.29	9.74	1.29	9	112	4.8	0.16	1.0	1.3	B1
841112	1822	1.06	37-42.48	121-37.33	9.72	1.63	14	137	8.2	0.15	0.7	0.8	C1
841112	654	46.36	37-19.29	121-43.73	8.11	1.86	13	159	8.7	0.21	0.9	3.0	C1
841112	731	37.29	37-35.98	121-48.18	9.20	1.26	19	72	4.2	0.19	0.3	0.4	B1
841112	1659	53.38	37-24.56	121-49.06	5.02	1.92	16	197	5.0	0.18	0.8	0.8	C1
841113	1159	9.71	37-16.90	121-41.81	6.46	1.86	16	152	3.4	0.17	0.7	1.1	C1
841113	1838	13.02	37- 7.72	121-35.55	13.15	2.33	23	186	4.7	0.20	0.9	1.1	C1
841114	2322	57.11	37-34.01	121-58.57	4.75	1.91	13	197	8.0	0.12	0.5	0.9	C1
841115	2335	20.66	37-38.73	121-45.72	8.88	1.57	25	83	3.0	0.15	0.4	0.3	A1
841115	628	32.09	37- 8.27	121-38.52	12.08	2.17	17	161	3.1	0.20	1.0	1.1	C1
841115	2 7	17.86	37-39.95	122- 6.13	22.09	2.24	16	287	5.6	0.43	6.2	1.7	D1
841115	916	31.82	37-16.90	121-41.71	10.21	3.08	46	121	3.3	0.32	0.5	1.2	C1
841115	1536	51.88	37-21.98	121-42.00	14.07	1.78	14	139	12.3	0.21	0.9	1.4	C1
841115	1630	19.49	37-18.87	121-58.62	12.02	1.99	23	170	15.7	0.23	0.9	1.5	C1
841116	1633	3.35	37-18.55	121-45.79	10.95	2.34	25	150	9.9	0.19	0.6	1.0	C1
841116	2015	53.76	37-29.28	121-42.99	10.86	1.44	13	167	5.9	0.13	0.5	1.0	B1
841117	6 8	48.28	37-31.34	121-43.35	8.76	1.55	21	82	6.2	0.20	0.6	0.9	B1
841123	15 6	3.11	37-17.92	121-42.18	8.76	2.23	29	130	5.3	0.18	0.5	0.9	B1
841125	356	23.01	37-28.12	121-41.09	8.73	1.57	23	82	3.1	0.22	0.6	1.1	B1
841126	2638	50.87	37-19.50	121-43.21	6.52	1.85	9	178	8.6	0.09	0.8	1.3	B1
841127	431	2.04	37-29.48	121-43.08	9.57	1.36	11	184	8.5	0.10	0.5	0.7	B1
841127	635	3.15	37-34.83	121-58.71	9.15	1.56	19	95	5.2	0.10	0.3	0.5	B1
841127	841	1.16	37-30.57	121-46.87	9.07	1.41	12	85	6.7	0.13	0.5	0.9	A1
841128	519	13.73	37-23.70	121-47.49	9.86	1.76	22	181	6.3	0.14	0.5	0.6	C1
841128	921	38.83	37-31.52	121-42.37	9.88	1.85	22	83	5.1	0.18	0.5	0.8	B1
841128	1236	29.87	37-20.12	121-44.34	11.47	1.90	19	161	10.4	0.18	0.7	0.9	C1
841205	128	9.24	37-39.24	121-42.84	5.77	2.22	29	71	2.4	0.16	0.3	0.3	B1
841205	11 5	33.88	37-25.50	121-47.86	11.47	1.59	17	164	2.9	0.15	0.7	0.8	C1
841206	346	11.51	37-33.93	121-37.71	8.84	1.19	9	174	3.3	0.03	0.2	0.2	B1
841206	613	52.26	37-34.74	121-48.74	7.58	1.51	18	78	5.6	0.18	0.6	0.9	B1
841206	839	29.84	37-29.54	121-43.38	11.29	1.44	15	163	6.5	0.24	0.9	1.3	B1
841206	18 9	43.11	37-28.11	121-41.58	12.22	1.43	14	125	3.8	0.14	0.5	1.0	B1
841207	334	12.63	37-39.46	121-42.86	5.79	1.45	27	46	2.0	0.16	0.3	0.4	B1
841207	427	18.54	37-34.56	121-51.56	8.96	1.76	22	166	5.9	0.23	0.7	1.0	B1
841207	5 9	36.93	37-34.67	121-51.31	10.30	1.56	21	163	5.7	0.17	0.5	0.8	B1
841207	1534	34.68	37-22.48	121-46.45	8.69	2.74	46	137	8.8	0.26	0.6	1.4	C1
841207	2125	41.57	37-29.40	121-44.86	9.30	1.34	13	97	6.2	0.14	0.6	0.9	B1
841208	1423	32.38	37-39.29	121-42.94	5.51	1.84	27	67	2.4	0.16	0.3	0.4	B1
841208	1433	44.23	37-39.42	121-42.75	5.72	1.22	22	86	2.1	0.18	0.4	0.4	B1
841208	636	33.98	37-24.87	121-49.18	8.77	1.50	18	196	4.5	0.12	0.8	0.4	C1
841208	1651	36.93	37-29.36	121-43.36	11.06	1.44	18	165	6.3	0.14	0.5	0.7	B1
841209	558	18.65	37-39.38	121-42.74	5.77	1.98	31	72	2.1	0.15	0.3	0.3	B1
841209	356	22.77	37-30.36	121-41.95	8.35	1.36	17	111	8.9	0.22	0.7	1.2	B1
841209	1351	51.60	37-22.55	121-46.18	10.36	2.20	34	136	8.8	0.22	0.6	1.0	C1
841209	14 0	16.37	37-22.78	121-45.77	10.11	2.05	27	150	8.6	0.19	0.6	0.9	C1
841210	1325	0.11	37-21.94	121-47.15	9.11	1.52	18	196	9.8	0.14	0.7	1.0	C1
841210	1720	3.50	37-29.54	121-45.46	10.14	1.17	18	140	5.9	0.12	0.8	1.0	B1
841211	1237	8.88	37-28.74	121-51.07	5.11	1.45	15	207	4.9	0.15	0.6	0.7	C1
841214	217	28.29	37-34.47	121-42.84	8.43	1.20	11	181	2.9	0.04	0.2	0.2	B1
841214	1036	7.67	37-39.35	121-42.50	5.41	1.15	17	108	2.1	0.12	0.3	0.4	B1
841214	2034	58.34	37-35.53	121-43.97	5.81	1.27	14	145	3.7	0.15	0.5	0.5	B1
841214	813	57.76	37-25.15	121-48.76	8.54	1.34	14	190	3.7	0.13	0.7	0.6	C1
841215	554	16.13	37-23.32	121-47.09	10.49	1.42	17	187	7.0	0.15	0.7	0.8	C1
841217	459	59.31	37-31.95	121-46.14	10.46	1.19	12	127	3.9	0.09	0.4	0.6	B1
841217	2015	9.56	37-31.57	121-36.52	8.57	1.42	20	90	7.7	0.19	0.5	1.3	B1
841217	1220	56.48	37-28.92	121-41.86	12.42	1.44	14	114	9.5	0.11	0.5	0.8	B1
841217	1920	24.64	37-29.76	121-43.81	10.82	1.44	16	95	7.9	0.11	0.4	0.6	B1

841219	635	2.33	37-22.88	121-46.42	10.47	2.21	30	145	8.1	0.23	0.7	1.2	C1
841221	1149	45.18	37-32.30	121-40.38	7.16	1.22	12	122	3.2	0.05	0.2	0.2	B1
841222	945	37.75	37-30.14	121-43.21	10.17	1.39	19	95	6.7	0.17	0.6	0.5	B1
841222	1230	42.81	37-29.56	121-46.71	10.18	1.26	15	89	5.0	0.08	0.3	0.5	A1
841222	1815	57.14	37-28.57	121-50.10	6.92	2.42	33	156	3.3	0.28	0.8	0.6	C1
841223	812	10.06	37-27.92	121-46.90	9.52	1.65	26	83	3.0	0.24	0.6	1.2	B1
841223	1028	42.70	37-23.61	121-46.57	11.69	1.41	14	181	6.7	0.19	1.0	1.1	C1
841224	1157	8.84	37-28.78	121-41.48	11.65	1.43	15	116	9.7	0.18	0.7	1.1	B1
841225	246	4.25	37-28.49	121-48.48	10.55	1.51	21	149	2.7	0.18	0.6	0.6	C1
841225	2052	39.81	37-27.82	121-46.98	11.72	1.57	18	85	10.4	0.19	0.7	1.1	B1
841226	1428	51.29	37-39.50	121-46.59	6.84	1.46	16	184	1.4	0.08	0.3	0.3	C1
841226	1741	36.25	37-35.48	121-42.93	6.12	1.91	29	56	4.1	0.14	0.3	0.3	A1
841226	1748	0.15	37-35.40	121-42.98	6.93	0.93	9	162	4.2	0.05	0.3	0.3	B1
841228	1932	27.25	37-30.49	121-42.77	11.74	1.33	12	103	7.1	0.09	0.4	0.6	B1
841229	15 1	21.37	37-27.91	121-39.45	10.55	1.52	20	124	1.5	0.21	0.7	1.1	B1
841230	1947	21.85	37-47.48	122- 1.70	3.63	1.83	14	308	8.4	0.22	1.0	1.4	C1
841230	2121	1.23	37-48.02	122- 4.06	4.36	1.83	21	295	12.1	0.27	1.0	1.6	C1
841231	442	3.68	37-47.63	122- 2.66	7.62	2.84	32	265	9.9	0.29	1.3	3.0	C1
841231	5 4	28.85	37-45.46	121-59.10	4.25	1.76	9	265	4.3	0.17	1.6	1.3	C1
841231	1051	30.00	37-49.95	122- 5.06	0.97	1.92	19	317	14.8	0.36	4.1	3.1	D1

TABLE 5
SOLUTION QUALITY FACTORS

(from Lee and Lahr, 1975, HYPO71)

<u>Q</u>	<u>Epicenter</u>	<u>Focal Depth</u>
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

Q is an average of QS and QD

<u>QS</u>	<u>RMS (Sec)</u>	<u>ERH (km)</u>	<u>ERZ (km)</u>
A	<0.15	<u><1.0</u>	<u><2.0</u>
B	<0.30	<u><2.5</u>	<u><5.0</u>
C	<0.50	<u><5.0</u>	
D	All Else		

<u>QD</u>	<u>NO</u>	<u>GAP</u>	<u>DMIN</u>
A	<u>>6</u>	<u><90°</u>	<u><Depth or 5 km</u>
B	<u>>6</u>	<u><135°</u>	<u><2x Depth or 10 km</u>
C	<u>>6</u>	<u><180°</u>	<u><50 km</u>
D	All Else		

FIGURE 4

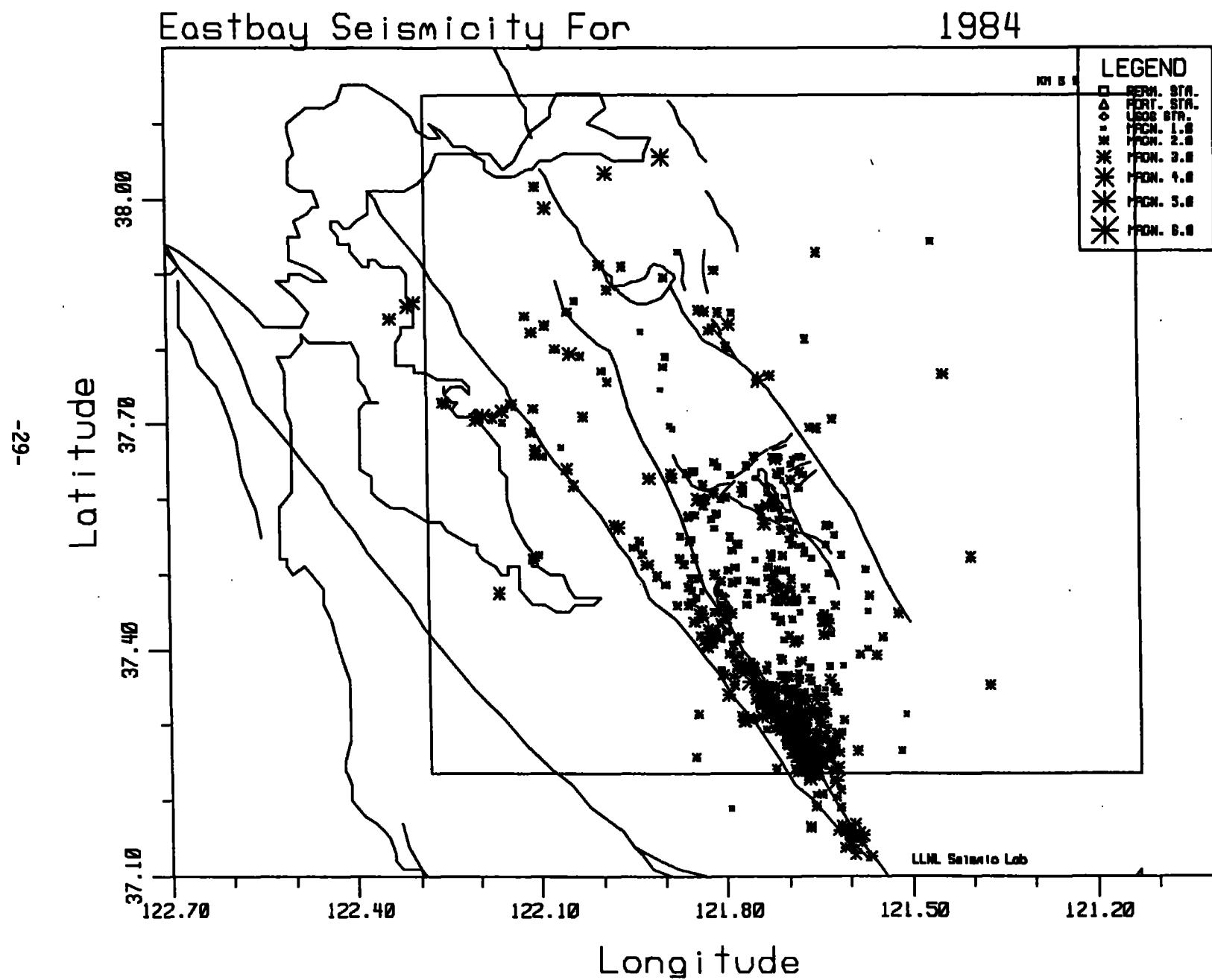


FIGURE 5

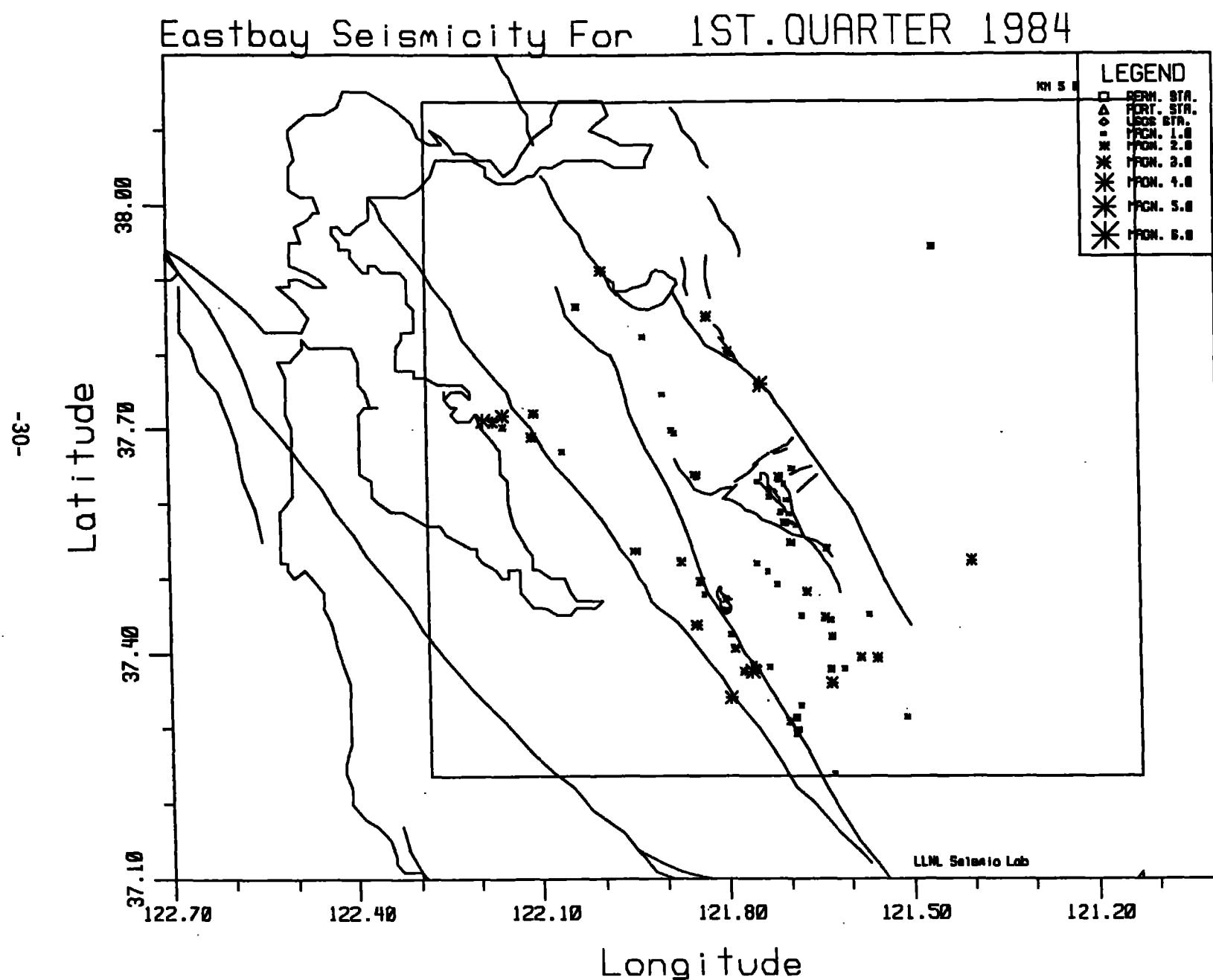


FIGURE 6

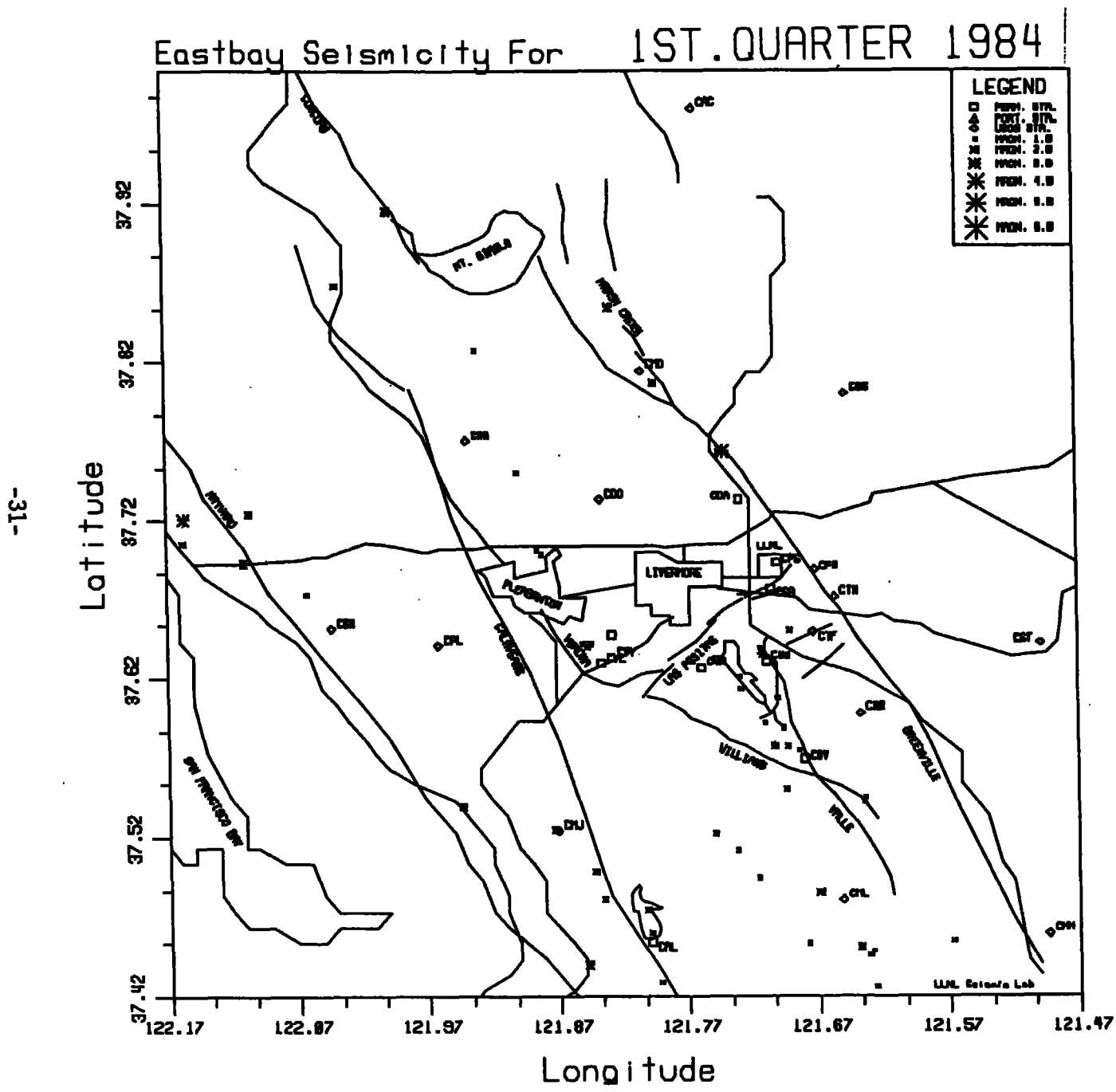


FIGURE 7

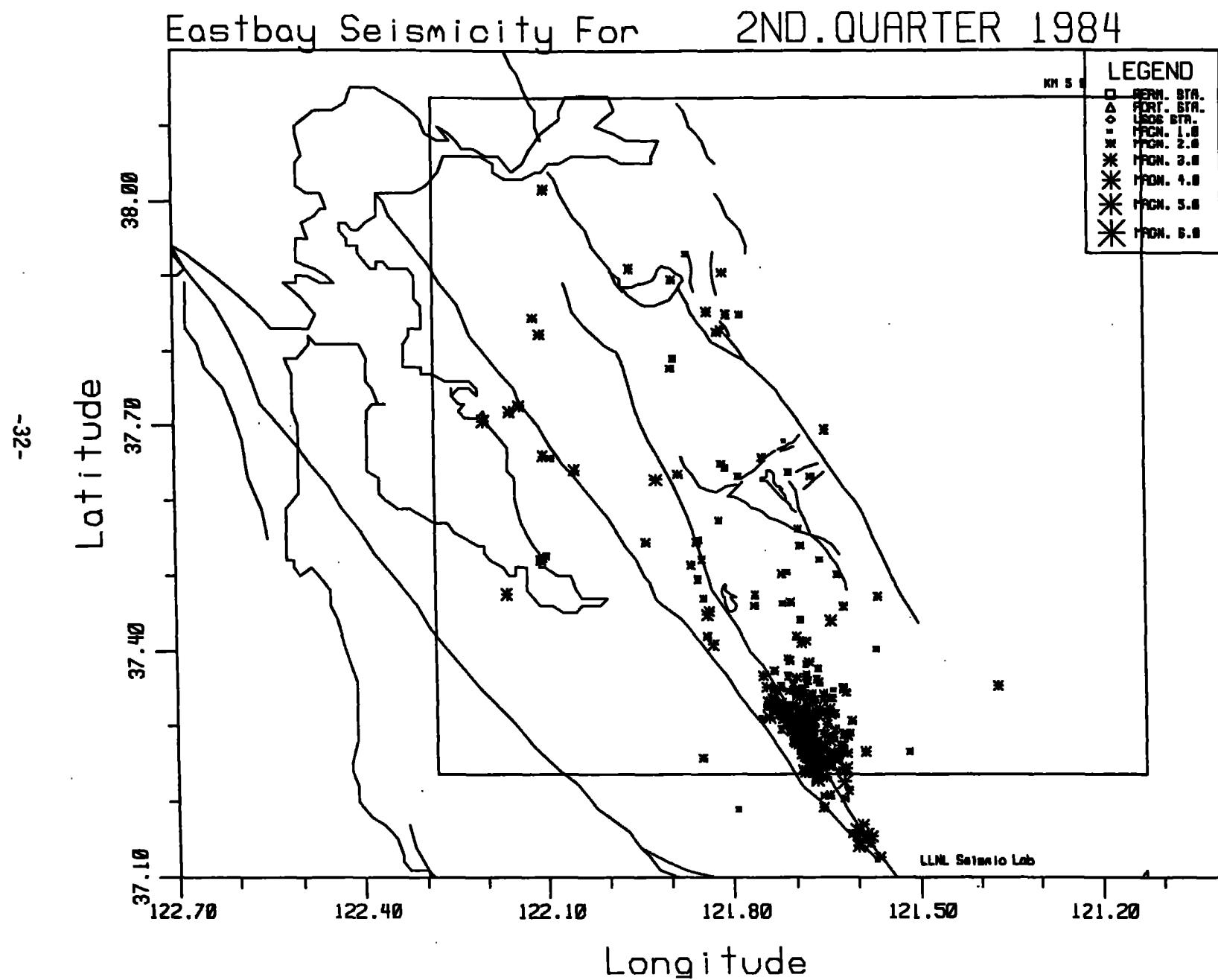


FIGURE 8

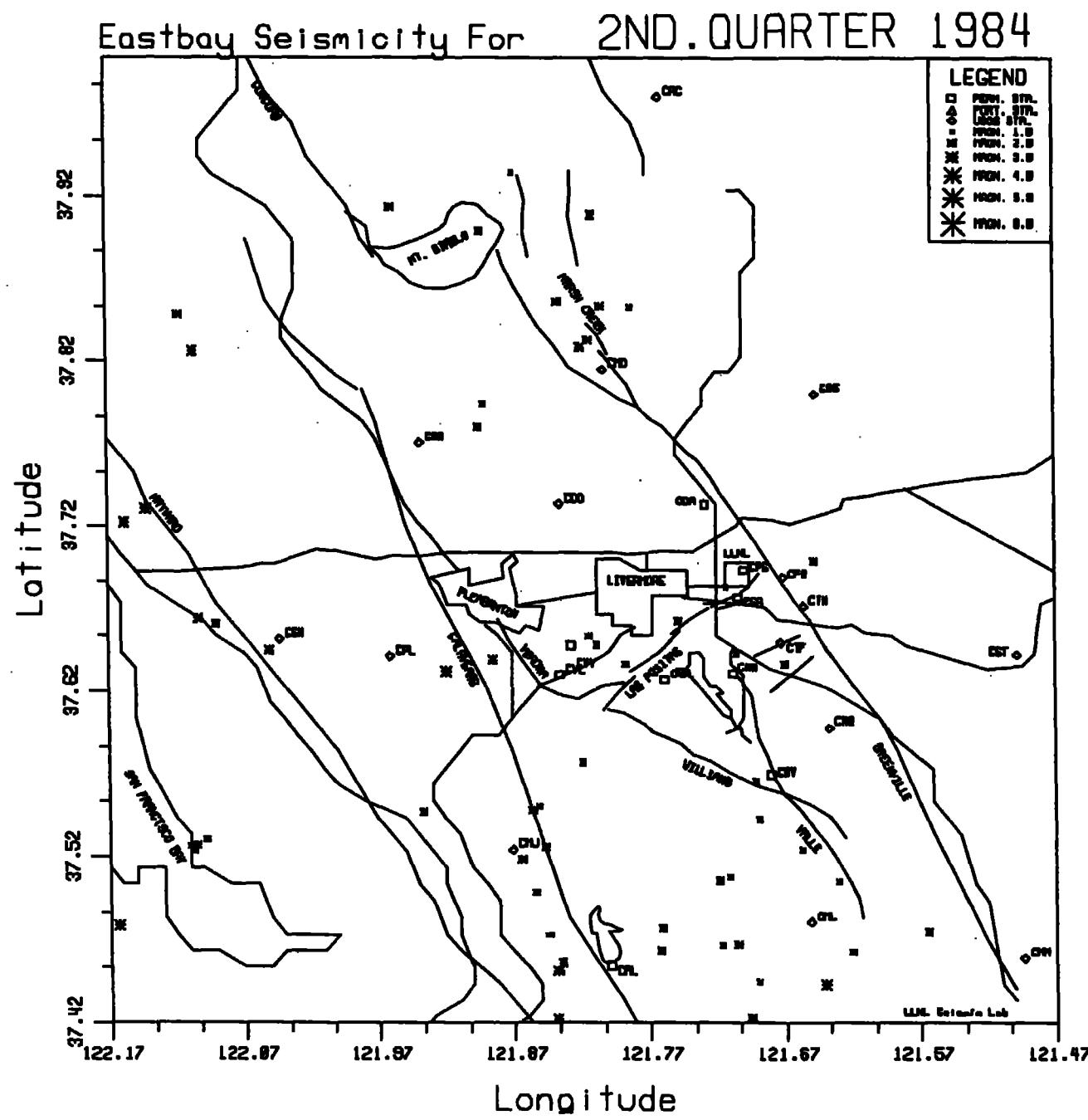


FIGURE 9

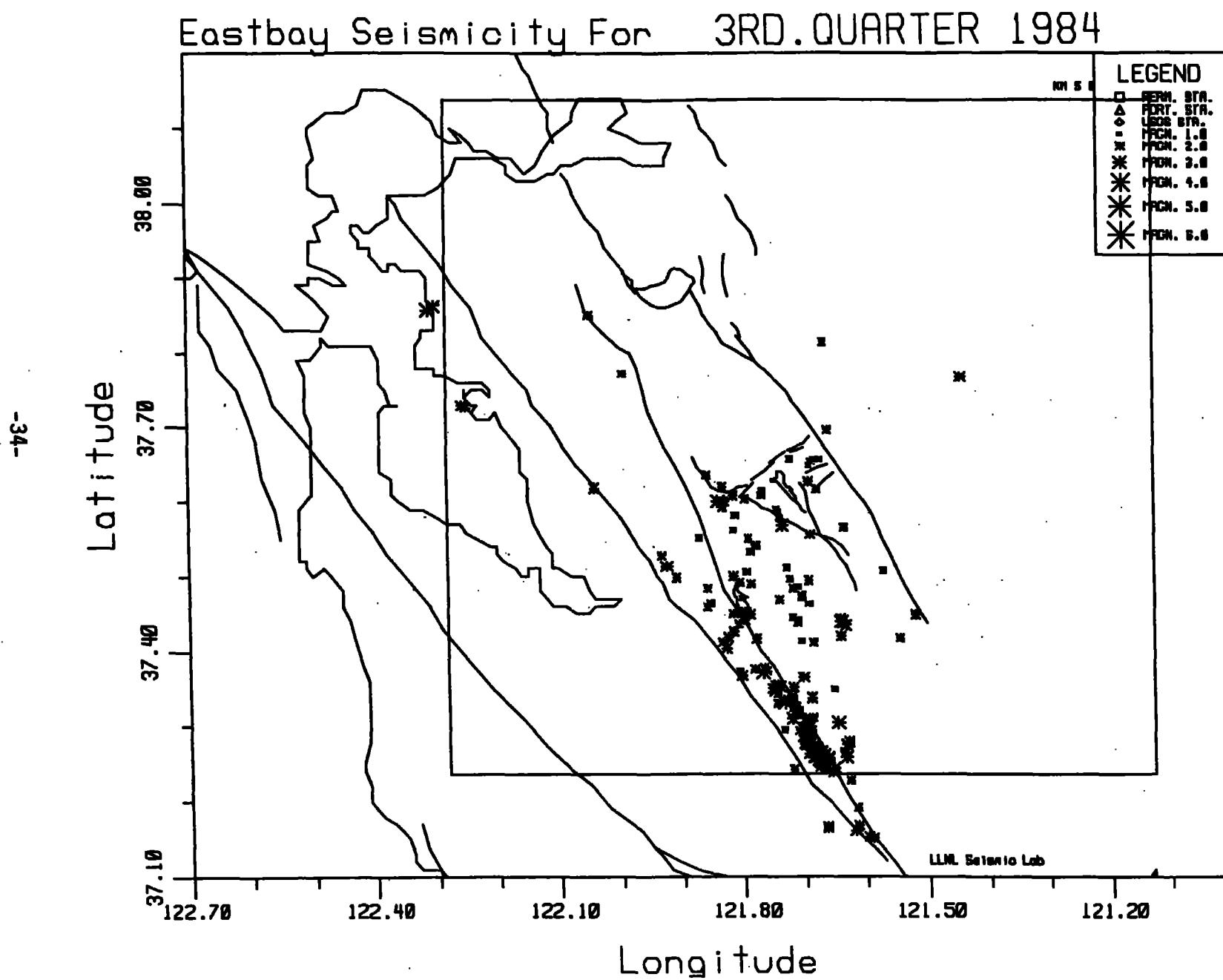


FIGURE 10

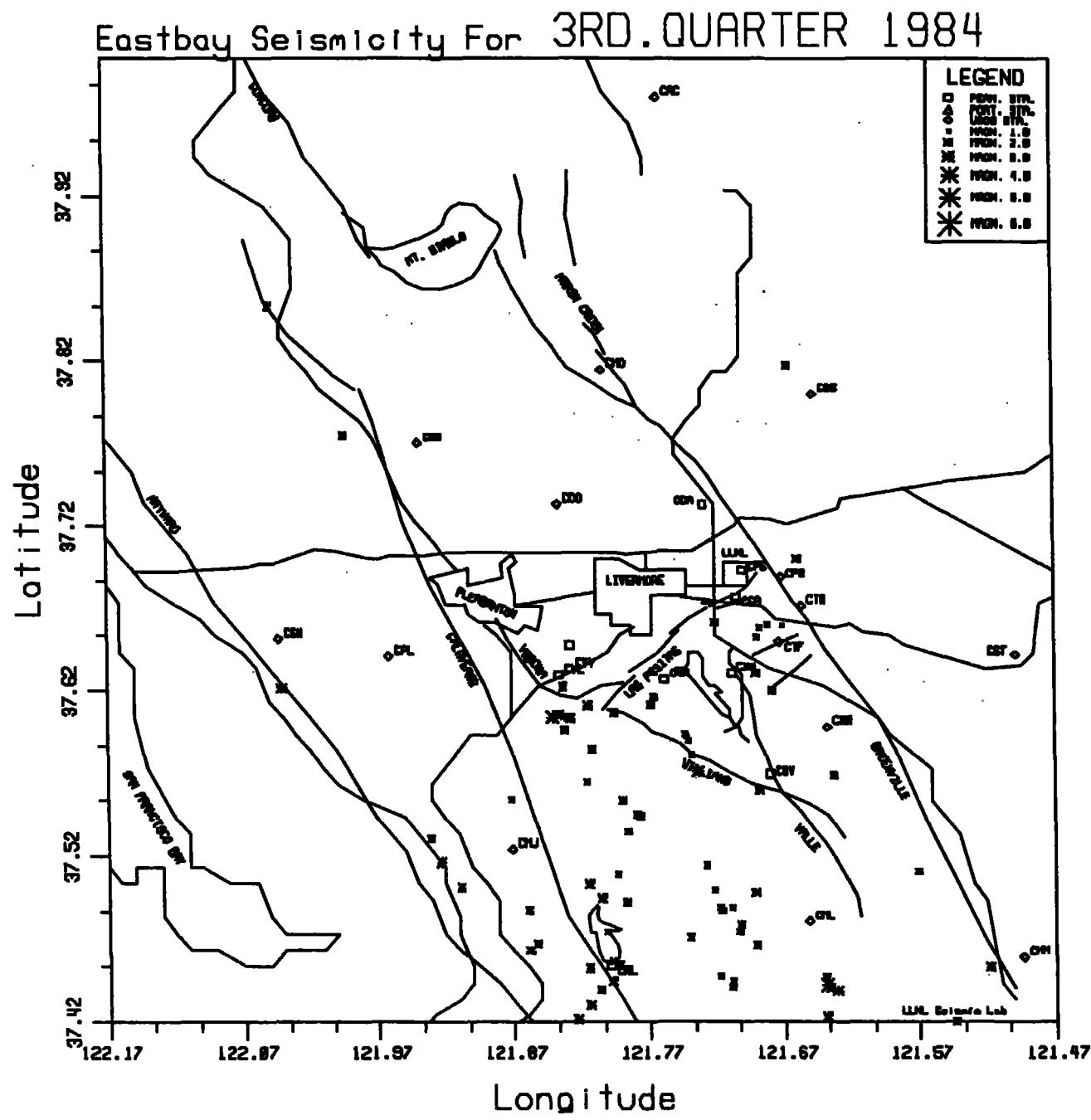


FIGURE 11

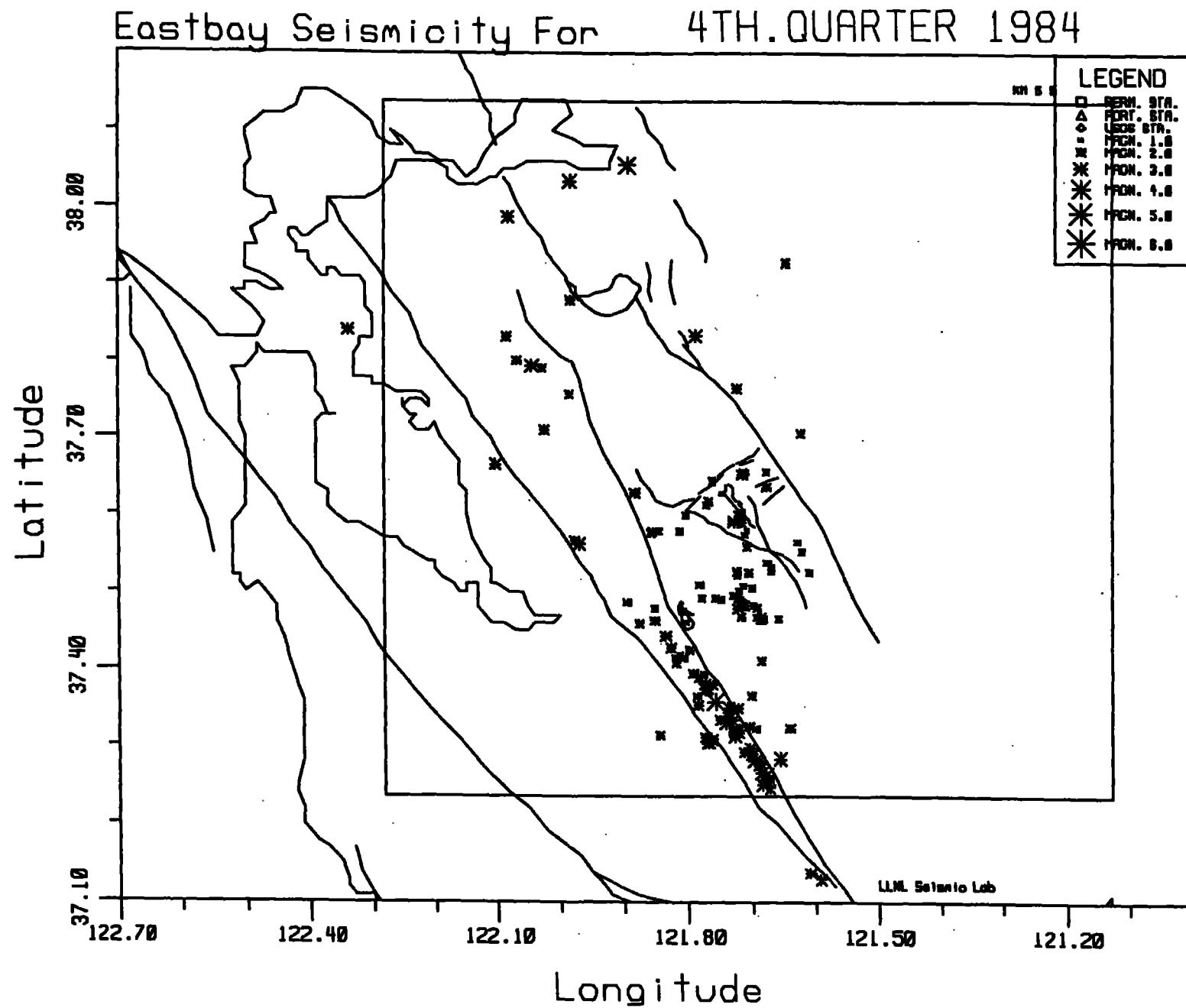


FIGURE 12

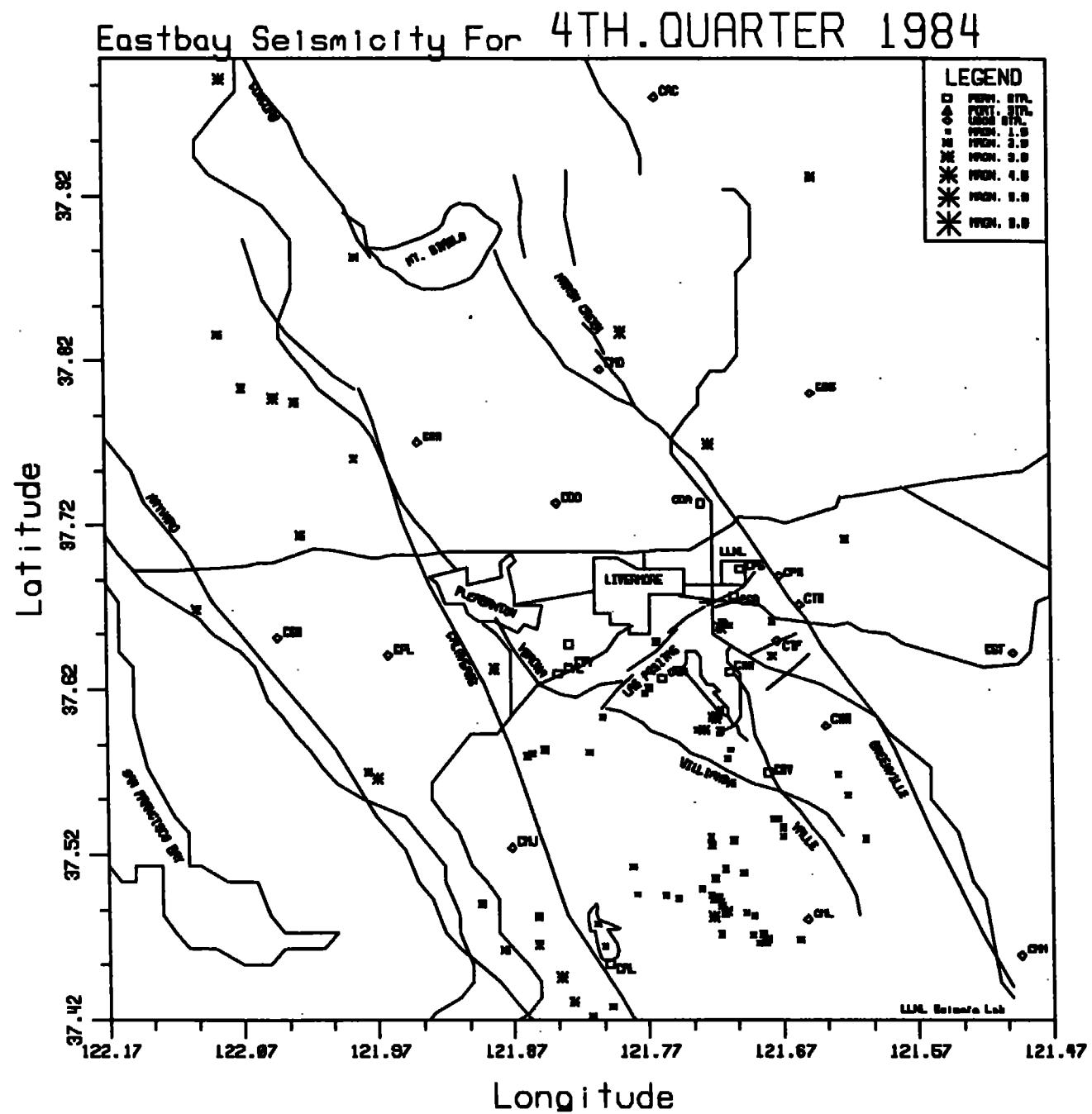


TABLE 6
COMPARISON OF NUMBER OF LOCATED EARTHQUAKES

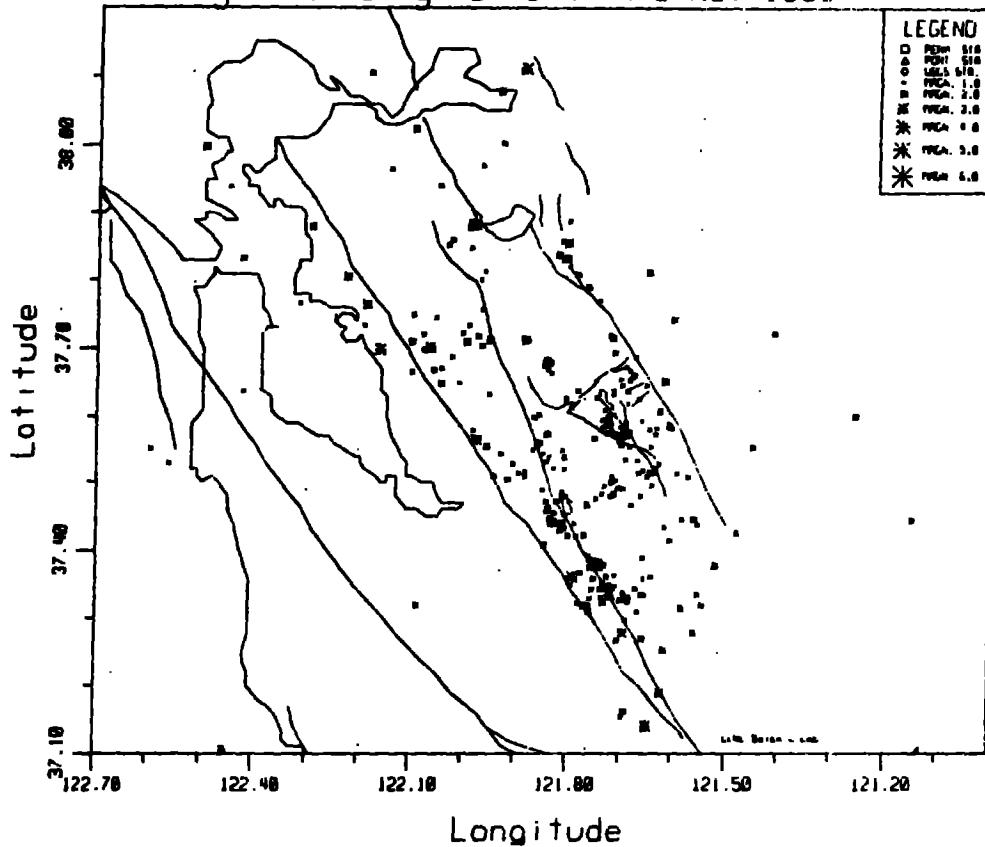
<u>Region</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
1	619	51	46	16	17
2	277	109	95	97	82

Region 1 - Marsh Creek/N. Greenville faults

Region 2 - Las Positas/S. Greenville/Williams/Valle faults

FIGURE 13

Eastbay Seismicity For JAN thru NOV 1983



Eastbay Seismicity For 1984

